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ABSTRACT

A library skills workbook provides college biology students with an introduction to biolcgical library resources. Divided into two sections, the first contains explanaticns of the various steps in the library research process. The seccnd consists of exercises keyed to the explanatory chapters of the first section. (RAA)

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# BIOLOGY LIBRARY WORKBOOK

Some of the concepts, definitions, and explanations in the Workbook were adapted from Library Research Guide to Biology by Tom Kirk (Ann Arbor, MI, Pierian Press, 1978). Contributors to this Workbook were Connie Miller, Victor Ocampo, and Norma Dickau. The cover was designed by Don Molloy.

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

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PREFACE

The Biology Library Workbook is one of the laboratory assignments to be completed in Biology 115. The purpose of the workbook is to teach a method of biological research. In completing the Workbook you will use a variety of biological reference books and the card catalogs at both CSB and SJU Library.

The Workbook is in two sections. The first section, on white paper, consists of explanations of various steps in the biological research process. The second section, on colored paper, consists of exercises. The exercises require you to apply the principles from the Explanation sections. Each set of exercises should be completed immediately after you have read the corresponding Explanation section.

A due date will be assigned for completion of the Workbook in each laboratory section. At the time you turn in your Exercise section you will be asked to transfer your answers to a computer card which will be supplied to you. We appreciate this extra effort on your part as it will allow us to evaluate the Biology Library Workbook as a learning device.

You must complete the Workbook 100% correctly before it is considered done. For this reason, the Workbooks need to be hand scored as well as analyzed by the computer. Exercise sections should be turned in to a library staff member at the Workbook desk at SJU Library or at the Reference desk at either CSB or SJU Library. Completed Exercise sections, and those that need corrections, will be returned to you in your laboratory section. Please write your name and laboratory instructor on several pages of your Exercise section.

The Biology Library Workbook does not repeat the Library Skills Workbook which is completed as part of the Freshman Colloquium. If you have not done the Library Skills Workbook and feel you could benefit by completing some or all of its sections, contact Connie Miller at either SJU (363-2125) or CSB (363-5681) Library.

INTRODUCTION

You read that the majority of violent crimes committed by women occur in the pre-menstrual week. You know very little about menstruation, but the topic seems interesting. You decide to research menstruation and its psycho-physiological effects to ascertain if there could be an explanation for the relationship between crime and the pre-menstrual period. This will be the topic explored throughout the explanation section of the workbook.

You will encounter three categories of scientific literature during your search for information:

1.) Tertiary literature is scientific literature which is designed to be instructive. It summarizes the main facts and theories about a subject. Examples of tertiary literature are textbooks, encyclopedias, handbooks, etc.

2.) Secondary literature is scientific literature which provides summaries of recent developments and research in a subject. Review articles are examples of secondary literature.

3.) Primary literature is scientific literature (usually periodical articles) which reports original research by a researcher.

In searching a biological topic it is necessary to locate and understand the pertinent primary literature. The search strategy outlined in this Workbook illustrates how to use all three categories of scientific literature to get to the information you need.

## CHAPTER I. ENCYCLOPEDIAS AND DICTIONARIES

Since you know very little about menstruation you need to begin with an authoritative summary of the subject. The summary will help you define your topic, limit it, begin to build a bibliography, and develop a list of search terms with which to further your research (A "search term" is another word or phrase you can use as a subject heading to search for information on your topic). Authoritative summaries can be found in biological encyclopedias and dictionaries (See page 5 for a list of the encyclopedias and dictionaries available at CSB and SJU). A standard encyclopedia for summaries of biological subjects is McGraw-Hill Encyclopedia of Science and Technology. When using an encyclopedia it is good to begin with the index or index volume (if there is one). This will give you access to all material on your subject which may be scattered throughout the set.

Figure 1. McGraw-Hill Encyclopedia of Science and Technology. Index Volume, page 263.

Meniscus lens **7** 514-515
Menispermaceae **11** 366
Menopause **2** 357; **8** 284*
Menoponidae **8** 90
Menorrhagia **11** 508
Menschutkin, N. **5** 79, 82 A
Menstruation **4** 667; **5** 85; **8** 285; **9** 519; **11** 504
 menopause **2** 357; **8** 284*
Mental deficiency **8** 285-286*
 classification **8** 285-286
 cretinism **3** 598*
 degrees of intelligence **8** 286
 diagnosis **8** 285
 mongolism **8** 668*
 phenylpyruvic oligophrenia **10** 127-128
 prevention and treatment **8** 286
Mental health **8** 268
Mental illness **8** 286-287*, 647
 delusion **4** 66-67*
 electroconvulsive shock **4** 534-535*

Figure 1 shows that the Index Volume to the McGraw-Hill Encyclopedia indicates that information on menstruation can be found in volumes 4, 5, 8, 9, and 11 of the set. Figure 2 shows the article in Volume 8, page 285 on menstruation itself and gives a brief overview of the physical processes involved. Figure 3 shows the article in Volume 4, page 677 on "Endocrine Mechanisms." This article includes a discussion and diagram of the menstrual cycle and a bibliography of potentially useful sources. From these two articles you learn the

Figure 2. McGraw-Hill Encyclopedia of Science and Technology, Volume 8, page 285.

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## Menstruation

Periodic sloughing of the uterine lining in women of reproductive age. Menstrual bleeding indicates the onset of the menstrual cycle, which lasts an average of 27–30 days, although ranges of 21–60 days have been recorded.

The principle control mechanism is a complex hormonal regulation. The follicle-stimulating hormone (FSH) of the anterior pituitary gland stimulates the developing ovarian follicle, which secretes increasing amounts of estrogens during the first half of the menstrual cycle. The estrogenic hormones cause a proliferation and thickening of the uterine mucosa together with blood vessel and gland enlargement. During the middle of the cycle the ovum is extruded (ovulation) from the ovarian follicle. The remaining empty follicle becomes the corpus luteum, formed by the ingrowth of connective tissue, which begins to secrete progesterone to prepare the uterus for pregnancy. If the ovum is not fertilized, the corpus luteum degenerates, progesterone secretion is thus greatly reduced, and the vascularized mucosa of the uterus is sloughed off. *See* ENDOCRINE MECHANISMS; ESTROGEN; OVULATION; HORMONE; ADENOHYPOPHYSIS; PROGESTERONE; UTERUS (HUMAN).

The onset of menstruation (menarche) occurs between the ages of 9 and 16, with the majority of females beginning at 12–14 years. Duration of the flow and cycle length may be quite variable during these early years. Gradually, a degree of regularity is established but the flow may last 3–7 days; this, as well as the copiousness of the flow, may vary from one period to another. Cessation of menses (menopause) occurs predominantly in women 45–50 years old. Normal and abnormal variations in the cycle may be affected by a hormonal imbalance and by many other factors, such as climate or emotional and physical health. *See* HOMEOSTASIS; MENOPAUSE.

The uterine mucosal lining, the endometrium, has a rich blood supply and many mucroscopic glands. Menstrual bleeding is preceded by a premenstrual phase which lasts several days and of which many women are cognizant because of mental depression and weariness. At this time there is a reduction in blood flow to the endometrial sur-

"See" references to other articles of interest

Aspect of the topic in which you are interested

Figure 3. McGraw-Hill Encyclopedia of Science and Technology, Volume 4, page 677.

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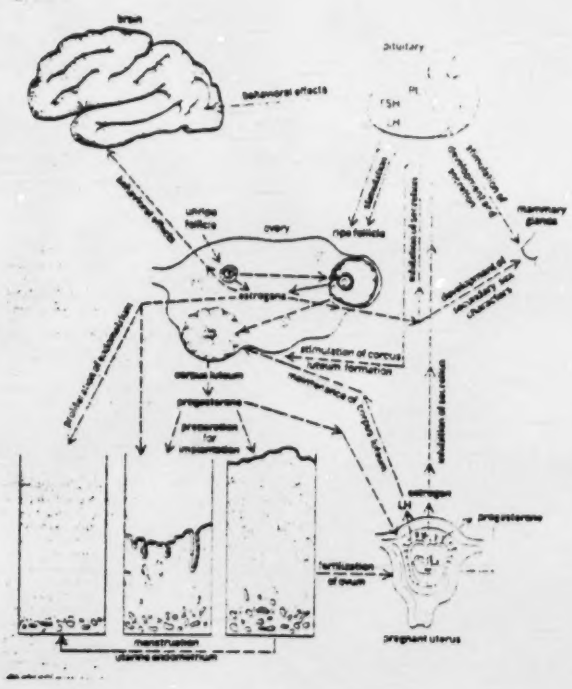
ENDOCRINE MECHANISMS

**Cyclical processes.** Cyclical processes of reproduction and molting have been noted in the preceding section. The vertebrate female sexual cycle forms the best-known instance of hormonal control of such a cycle (Fig. 2).

In mammals the anterior pituitary secretes




cal, mediated through neurosecretory cells acting on the pituitary. In oviparous vertebrates the cycle is essentially the same up to ovulation. Following deposition of eggs, or parturition in mammals, the anterior pituitary forms prolactin which induces maternal behavior and in mammals is essential to lactation. The flow of milk in lactating mammals is initiated by oxytocin. *See* ESTRUS; LACTATION.

[BRADLEY T. SCHEER]

Bibliography of useful tertiary sources

*Bibliography:* A. Gorbman and H. A. Bern, *Textbook of Comparative Endocrinology*, 1962; P. M. Jenkin, *Animal Hormones: A Comparative Survey*, pt. 1: *Kinetic and Metabolic Hormones*, 1962; C. D. Turner, *General Endocrinology*, 4th ed., 1966; R. H. Williams, *Textbook of Endocrinology*, 4th ed., 1968.

following things about menstruation:

1.) the menstrual cycle is an endocrine mechanism (Figure 3);
2.) hormones are involved throughout the cycle (Figures 2 and 3);
3.) there is often a period of depression and anxiety in the premenstrual phase of the cycle (Figure 2);
4.) there are search terms under which you can look to get more information on various aspects of topic; e. g., menstrual cycle, endocrine mechanism, hormones, pituitary gland, progesterone, etc.;
5.) you know the names and authors of some tertiary sources from the encyclopedia bibliography (See Figure 3) where you can look to find additional information.

The encyclopedia, therefore, has been useful to define your topic, to develop search terms with which to continue your research, and to begin to build a bibliography. If you have any trouble locating or using any of the biological encyclopedias or dictionaries (listed on page 5) ask for help at the information desk.

Go to page 1 of the Colored Section to complete Assignment I.

DICTIONARIES AND ENCYCLOPEDIAS - SJU LIBRARY

McGraw-Hill Encyclopedia of Science and Technology (Q 121 .M3 1977)
Van Nostrand's Scientific Encyclopedia (Q 121 .V3 1976)
McGraw-Hill Dictionary of Scientific and Technical Terms (Q 123 .M15)
Grzimek's Encyclopedia of Evolution (QE 711.2 G79)
Henderson's Dictionary of Biological Terms (QH 13 .H38 1963)
Encyclopedia of Microscopy and Microtechnique (QH 203 .G8)
McGraw-Hill Dictionary of the Life Sciences (QH 302.5 M3)
Environmental Biology (QH 310 A395)
McGraw-Hill Encyclopedia of Environmental Science (QH 540.4 M3)
Grzimek's Encyclopedia of Ecology (QH 541 .G79)
Grzimek's Animal Life (QL 3 .G7813)
Collegiate Dictionary of Zoology (QL 9 .P4)
Encyclopedia of the Animal World (QL 50 .G7513 1975)
Dictionary of Entomology (QL 462.3 L43 1976)
Mammals of the World (QL 703 W222 1975)
Mammals of North America (QL 715 .H15)
Dictionary of Biochemistry (QP 512 .S73)

DICTIONARIES AND ENCYCLOPEDIAS - CSB LIBRARY

McGraw-Hill Encyclopedia of Science and Technology (Q 121 .M3 1977)
Van Nostrand's Scientific Encyclopedia (Q 121 .V3 1976)
Harper Encyclopedia of Science (Q 123 .H26 1967)
McGraw-Hill Dictionary of Scientific and Technical Terms (Q 123 .M15)
Grzimek's Encyclopedia of Evolution (QE 711.2 G79)
Dictionary of Biological Sciences (QH 13 .G68)
Encyclopedia of Biological Sciences (QH 13 .G7)
Henderson's Dictionary of Biological Terms (QH 13 .H38)
Dictionary of Life Sciences (QH 302.5 .D52 1977)
McGraw-Hill Dictionary of the Life Sciences (QH 302.5 .M3)
Biology Data Book (QH 310 .A392)
McGraw-Hill Encyclopedia of Environmental Science (QH 540.4 .M3)
Grzimek's Animal Life Encyclopedia (QL 3 .G7813)
Mammals of the World (QL 703 .W222 1975)
Audubon Society Book of Wild Animals (QL 706 .L56)
Dictionary of Biochemistry (QP 512 .S73)
Encyclopedia of Biochemistry (QP 512 .W5)
Dictionary of Microbiology (QR 9 .S56)
McGraw-Hill Encyclopedia of Energy (TJ 163.2 .M3)

## CHAPTER II. CARD CATALOG

You are now ready to use the encyclopedia bibliography to help locate tertiary sources on your subject in the card catalog. Although the card catalog is the major means of access to the library collection, remember that it has limitations. It lists only entire books and not parts of books or periodical articles. Most government documents are not listed in the card catalog. In addition, using subject headings to locate all the books on your subject of interest can be difficult, because words chosen for subject headings are often different from those used in everyday conversation.

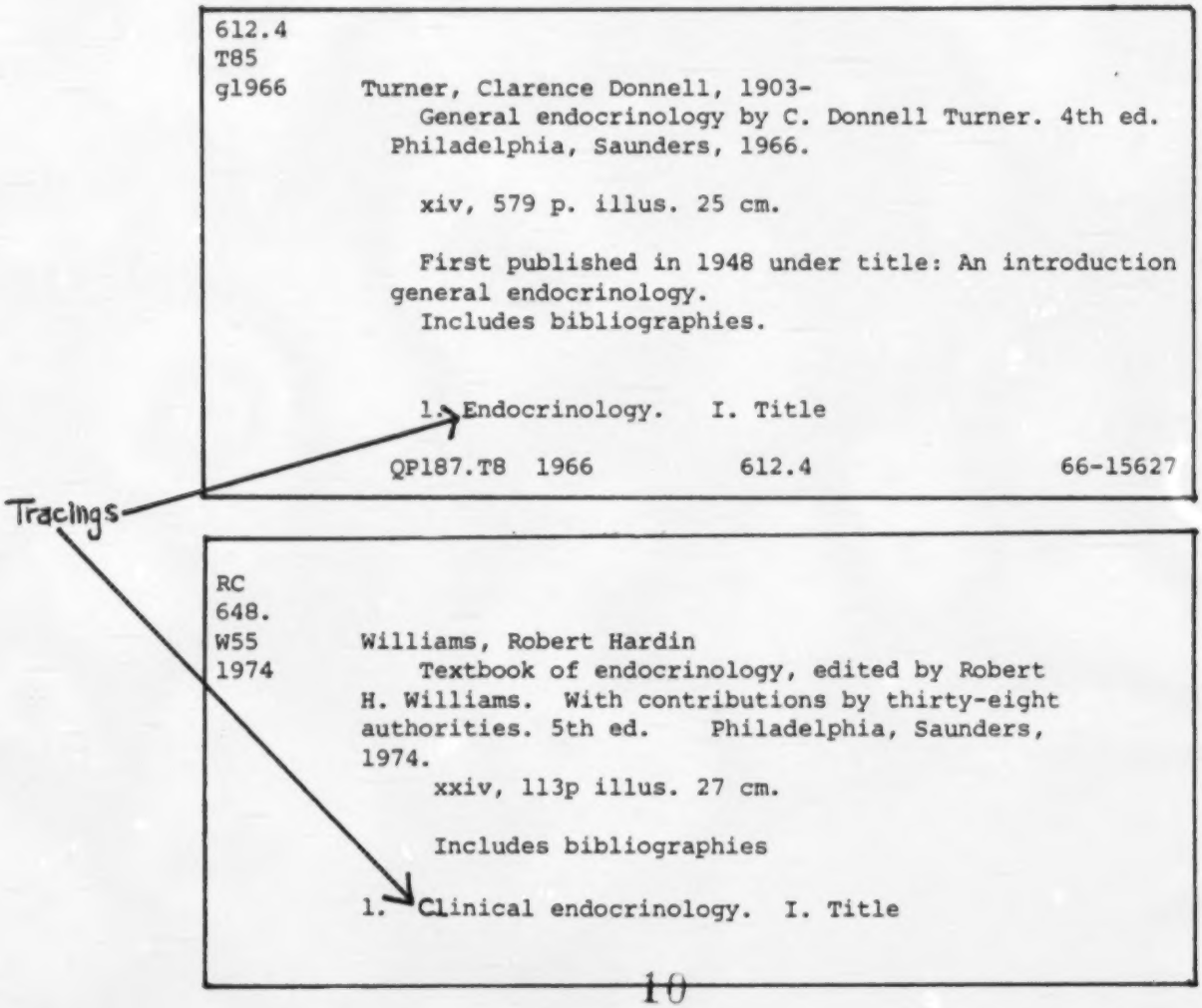
At this point in your research for information on menstruation and its psycho-physiological effects you have some facts which can help you use the card catalog. From the bibliography in McGraw-Hill Encyclopedia of Science and Technology you discovered two useful sources (See Figure 3):

Turner, C. D. General endocrinology, 4th ed. 1968.

Williams, R. H. Textbook of endocrinology, 4th ed. 1968.

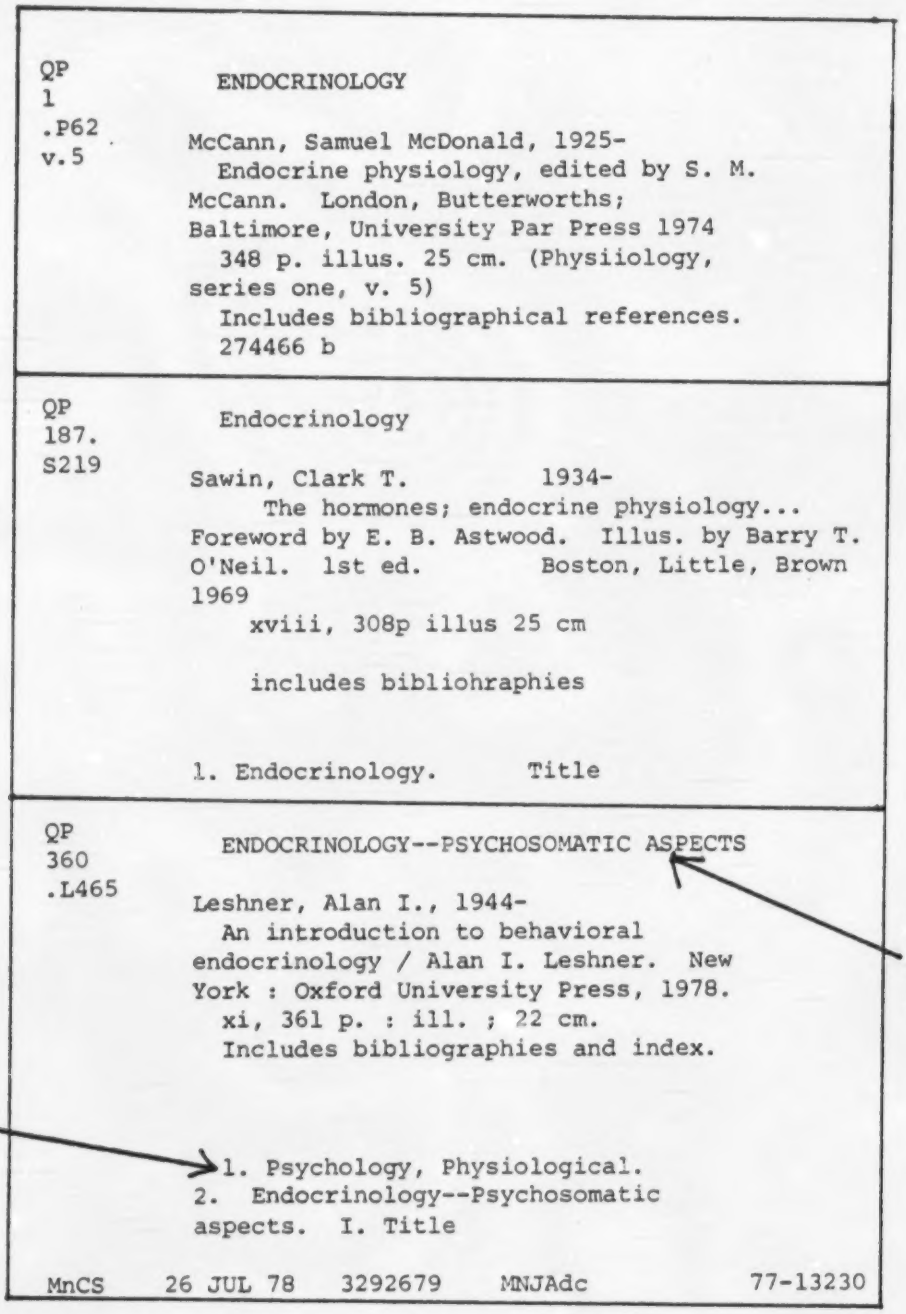
A check in card catalogs under he authors' names shows that at least one of the libraries has both of these books (See Figure 4). (For books you need that CSB and SJU Library do not have use the MINITEX interlibrary borrowing system discussed in Section 13 of the Library Skills Workbook).

Figure 4. Author cards for books by Turner and Williams



From the subject tracing at the bottom of the card for Turner's book you know that his book and other books on that subject are filed under the subject heading ENDOCRINOLOGY. Figure 5 shows some of the books listed under that subject in the card catalog (You could also check in the card catalog under the subject heading CLINICAL ENDOCRINOLOGY, the tracing on the card for Williams's book).

Figure 5. Catalog cards under the subject heading ENDOCRINOLOGY.



QP
1
.P62
v.5

ENDOCRINOLOGY

McCann, Samuel McDonald, 1925-
Endocrine physiology, edited by S. M. McCann. London, Butterworths; Baltimore, University Par Press 1974
348 p. illus. 25 cm. (Physiiology, series one, v. 5)
Includes bibliographical references.
274466 b

QP
187.
S219

Endocrinology

Sawin, Clark T. 1934-
The hormones; endocrine physiology...
Foreword by E. B. Astwood. Illus. by Barry T. O'Neil. 1st ed. Boston, Little, Brown 1969
xviii, 308p illus 25 cm

includes bibliohraphies

1. Endocrinology. Title

QP
360
.L465

ENDOCRINOLOGY--PSYCHOSOMATIC ASPECTS

Leshner, Alan I., 1944-
An introduction to behavioral endocrinology / Alan I. Leshner. New York : Oxford University Press, 1978.
xi, 361 p. : ill. ; 22 cm.
Includes bibliographies and index.

1. Psychology, Physiological.
2. Endocrinology--Psychosomatic aspects. I. Title

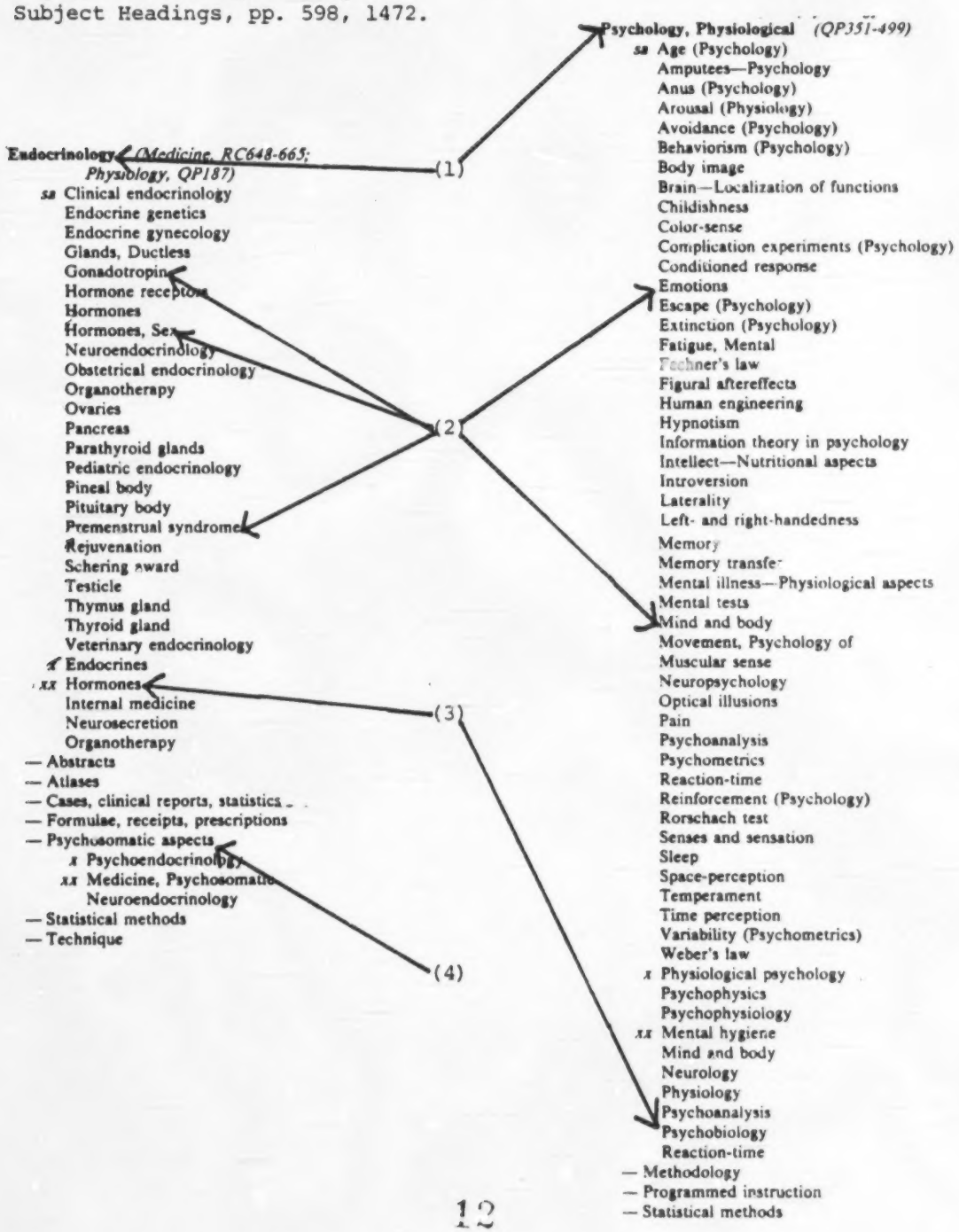
MnCS 26 JUL 78 3292679 MNJAdc 77-13230

Sub-division of subject heading ENDOCRINOLOGY

Additional subject tracing that could be valuable

You may want to use the Library of Congress Subject Headings book (Section 5 of the Library Skills Workbook) to get a comprehensive set of subject headings under which to look for books on your subject. Figure 6 shows excerpts from the LC Subject Headings book for subject headings relevant to the study of menstruation and crime. The numbers in parentheses are explained on page 9.

Figure 6. Library of Congress Subject Headings, pp. 598, 1472.



(1) Headings in bold print are authorized for use. These two headings were determined from the tracings on catalog cards for books on your subject.

(2) "sa" (see also) refers to related subject headings. Under ENDOCRINOLOGY the most relevant "sa" headings are GONADOTROPIN, HORMONES, SEX and PREMENSTRUAL SYNDROME. Under PSYCHOLOGY, PHYSIOLOGICAL the most relevant "sa" headings are EMOTIONS and MIND AND BODY.

(3) "xx" refers to related headings which are broader in scope than the headings under which they are listed. These are useful only when the more specific subject headings do not lead to anything in the card catalog.

(4) Dashes indicate subject subdivisions. Under ENDOCRINOLOGY, the most useful subject subdivision is PSYCHOSOMATIC ASPECTS. This is the heading under which you located the Leshner book in the card catalog (See Figure 5).

You will want to use the information on the catalog cards to evaluate the books you find under various subject headings. Some will be more useful to you than others. Criteria for evaluation are:

1.) Date of publication. Especially in the sciences, the most recent material tends to be most useful.

2.) Author's authority. If you have seen a certain author's name referred to in several bibliographies, he or she is probably an authority in the field.

3.) Bibliographical note. Books with bibliographies are generally more useful than ones without.

4.) Publisher's reputation. Some publishers are known to publish worthwhile books. For biology, major university presses, Wiley, Saunders, and Freeman are among the most reliable publishers.

5.) Edition number. If a book has been issued in a number of editions, or has been revised or enlarged, it has most likely proven its worth in the field.

Based on some of these criteria, the book by Alan Leshner, An introduction to behavioral endocrinology, looks most useful (See Figure 5, page 7).

Go to page 2 of the Colored Section to complete Assignment II.

## CHAPTER III. TERTIARY AND SECONDARY SOURCES

In Chapter I you used encyclopedias and dictionaries to define and limit your topic and to build a bibliography of tertiary sources (tertiary sources are instructive and summarize the main facts and thoeries about a subject). In Chapter II you located in the card catalog the tertiary sources from the encyclopedia and dictionary bibliographies and used subject tracings and the LC Subject Headings book to lead you to other useful summary works. In this chapter you will use tertiary sources to further clarify your topic and to find secondary sources (secondary sources are those which provide summaries of recent research on a subject) and then primary sources (primary sources are works of original research on a subject) on the topic of premenstrual syndrome.

From your evaluation of the books listed in the card catalog under the subject heading ENDOCRINOLOGY, A. I. Leshner's book, An introduction to behavioral endocrinology, looked most useful (Chapter II, page 7). This is where the search terms you listed from examining the encyclopedia articles on menstruation come in handy. Figure 7 shows what you find if you carefully examine the index to Leshner's book:

Figure 7. Index to A. I. Leshner's book An introduction to behavioral endocrinology, pp. 357-359.

Menstrual cycle: aggressiveness and, 149-151; heterotypical sexual behavior and, 177; human sexual behavior and, 193-195; mood and, 295-298; sex attraction and, 128; sexual behavior and, 149-151.

You find the search term "Menstrual cycle" listed in the index, and information on its relationship to mood appears on pp. 295-298.

Progesterone, 348; activity and, 64-65; aggression and, 84; facilitation of female sexual behavior, 154-155; food intake and, 45-48; inhibitory effects on female sexual behavior, 155-159, 189; maternal aggression and, 230-231; maternal behavior-mammalian and, 221-225, 227-228; parental behavior-ring doves and, 232-236; in pregnancy and lactation, 215-216; premenstrual syndrome and, 297-300; response to sexual stimulation, 188-189; territotial marking and, 121

You find the search term "Progesterone" listed in the index, and information on its relationship to premenstrual syndrome appears on pp. 297-300.

An examination of pages 295-300 of Leshner's book reveals an excellent discussion of the factors involved in premenstrual physiology and of the basic research that has been done on what has come to be known as "Premenstrual syndrome." Figure 8 shows an excerpt from this discussion. The underlined authors' names followed by dates are references to sources on premenstrual syndrome.

Figure 8. A. I. Leshner, Introduction to behavioral endocrinology, pp. 295-300.

HORMONES AND MOODS:
THE PREMENSTRUAL SYNDROME

Moods and mood changes are a special class of emotions. Although most emotions are reactions precipitated by and directed

tensively with respect to endocrine function, the mood changes that occur across the menstrual cycle.

Many women report feeling somewhat depressed, anxious, and irritable just before menstruation begins, during the premenstrual period. This pattern of mood changes is so pervasive that it has been termed the *premenstrual syndrome* (Moos, 1968; Parlee, 1973), and many studies have been conducted to determine both the generality and the form of these mood changes. For example, Moos et al. (1969) studied the mood states of 15 women over the course of two menstrual cycles. They found that the women experienced quite consistent mood changes over both cycles: increases in depression during the premenstrual phase and an increase in anxiety during the time of menstruation. Ivey and Bardwick (1968) reported that women are more anxious, hostile, and depressed during the premenstrual period than during other menstrual cycle stages; and Marinari, Leshner, and Doyle (1976) found that women exhibit greater reactivity to stress, as measured by adrenocortical responses, during the menstrual phase of the cycle than during the midcycle phase. The reader interested in pursuing the form and generality of menstrual-cycle mood changes further is referred to the excellent reviews by Parlee (1973) and Smith (1975).

The discussion of premenstrual syndrome in Leshner's book is included in a chapter on "Emotion and Mood." As is often the case, at the end of the chapter there is a bibliography, arranged alphabetically by authors' names, of books and articles referred to throughout the chapter. Included in this bibliography are the books and articles underlined in Figure 8. An excerpt from the bibliography is shown in Figure 9. An examination of the bibliography entries

Figure 9. A. I. Leshner, Introduction to behavioral endocrinology, pp. 309-313. Excerpts from the bibliography following the chapter on "Emotion and Mood."


Arnold, M. B. An excitatory theory of emotion. In M. L. Reymert (Ed.), *Feelings and Emotion*. New York: McGraw-Hill, 1950, pp. 11-33.

Arnold, M. B. *Emotion and Personality, Vol. II. Neurological and Physiological Aspects*. New York: Columbia University Press, 1960.

Ax, A. F. The physiological differentiation between fear and anger in humans. *Psychosomatic Medicine*, 1953, 13, 433-442.

Bäckström, T., and Carstensen, H. Estrogen and progesterone in plasma in relation to premenstrual tension. *Journal of Steroid Biochemistry*, 1974, 5, 257-260.

Bindra, D. B. A unified interpretation of emotion and motivation

203.

Hamburg, D. A., Moos, R. H. & Yalom, I. D. Studies of distress in the menstrual cycle and the postpartum period. In R. P. Michael (Ed.), *Endocrinology and Human Behavior*. London: Oxford University Press, 1968, pp. 94-116.

Ivey, M. E. & Bardwick, J. M. Patterns of affective fluctuation in the menstrual cycle. *Psychosomatic Medicine*, 1968, 30, 336-345.

James, W. What is an emotion? *Mind*, 1884, 9, 188-205.

James, W. *Textbook of Psychology*. New York: Henry Holt, 1892.

Kline, N. S. (Ed.). *Factors in Depression*. New York: Raven Press.

Moos, R. H. The development of a menstrual distress questionnaire. *Psychosomatic Medicine*, 1968, 30, 853-867.

Moos, R. H., Kopell, B. S., Melges, F. T., Yalom, I. D., Lunde, D. T., Clayton, R. B. & Hamburg, D. A. Fluctuations in symptoms and moods during the menstrual cycle. *Journal of Psychosomatic Research*, 1969, 13, 37-44.

Paige, K. E. Effects of oral contraceptives on affective fluctuations associated with the menstrual cycle. *Psychosomatic Medicine*, 1971, 33, 515-537.

Parlee, M. B. The premenstrual syndrome. *Psychological Bulletin*, 1973, 80, 454-465.

Selye, H. *The Stress of Life*. New York: McGraw-Hill, 1956.

Sheard, M. H. Endocrines and neuropsychiatric disorders. In B. E. Eleftheriou and R. L. Sprott (Eds.), *Hormonal Correlates of Behavior, Vol. 1*, New York: Plenum Press, 1975, pp. 341-365.

Smith, S. L. Mood and the menstrual cycle. In E. J. Sachar Ed.), *Topics in Psychoendocrinology*. New York: Grune and Stratton, 1975. pp. 19-58.

Stanley-Jones, D. The biological origin of love and hate. In M. B. Arnold (Ed.), *Feelings and Emotions*. New York: Academic Press,


Arrows point to those authors mentioned in the section on premenstrual syndrome

shows that both secondary and primary sources are included. For example, M. B. Parlee's article in Psychological Bulletin is a review article (You are told that Parlee's article is an "excellent review" in the discussion on Premenstrual syndrome in Leshner's book. See Figure 8.); therefore, secondary. T. Backstrom and H. Carstensen's article in the Journal of Steroid Biochemistry, on the other hand, is original research; therefore, primary.

Leshner's book, a tertiary source, has further defined your topic and provided you with a list of secondary and primary sources on the premenstrual

syndrome. You should begin at this point in your research, to compile a list, preferably on index cards, of bibliographic sources that appear potentially useful. The list, in terms of the premenstrual syndrome, would look like this:

1.) Backstrom, T. and Carstensen, H. "Estrogen and progesterone in plasma in relation to premenstrual tension," Journal of Steroid Biochemistry, 1974, 5, 257-260.

2.) Ivey, M. E. and Bardwick, J. M. "Patterns of affective fluctuation in the menstrual cycle," Psychosomatic Medicine, 1968, 30, 336-345.

3.) Moos, R. H. and others. "Fluctuations in symptoms and moods during the menstrual cycle," Journal of Psychosomatic Research, 1969, 13, 37-44.

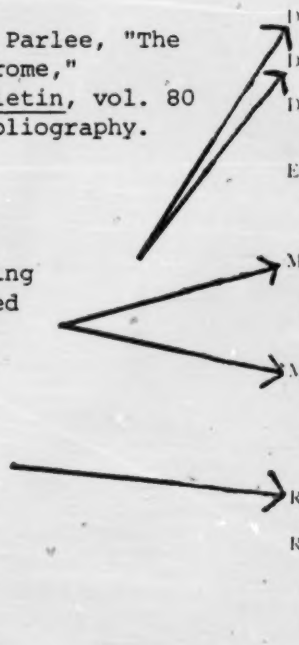
4.) Parlee, M. B. "The premenstrual syndrome," Psychological Bulletin, 1973, 80, 454-465, (review).

5.) Smith, S. L. "Mood and the menstrual cycle," In E. J. Sachar (ed.) Topics in Psychoendocrinology, New York, Grune and Stratton, 1975, pp. 19-58, (review).

To expand this list in terms of primary sources, the next step would be an examination of the secondary or review articles like M. B. Parlee's "The premenstrual syndrome" (Check the CSB-SJU Periodical List - Chapter 8 of the Library Skills Workbook - to see if Psychological Bulletin, in which you find Parlee's article, is available at either library. If it is not you can order a copy of the article through MINITEX.). If you read Parlee's article you find a summary of research done on the premenstrual syndrome and some conclusions based on results of this research. In addition, you find a bibliography composed almost totally of primary sources. Excerpts from this bibliography are shown in Figure 10.

Figure 10. M. B. Parlee, "The premenstrual syndrome," Psychological Bulletin, vol. 80 (6): 454-465. Bibliography.

The most interesting articles are marked by arrows.




DALTON, K. Menstruation and crime. *British Medical Journal*, 1961, **2**, 1752-1753.

DALTON, K. *The premenstrual syndrome*. Springfield, Ill.: Charles C Thomas, 1964.

DALTON, K. The influence of mother's menstruation on her child. *Proceedings of the Royal Society of Medicine*, 1966, **59**, 1014.

EICHNER, E., & WALTNER, C. Premenstrual tension. *Medical Times*, 1955, **83**, 771-779.

MOOS, R. H., KOPELL, B. S., MELGES, F. T., YALOM, I. D., LUNDE, D. T., CLAYTON, R. B., & HAMBURG, D. A. Fluctuations in symptoms and moods during the menstrual cycle. *Journal of Psychosomatic Research*, 1969, **13**, 37-44.

MORTON, J. H., ADDITON, H., ADDISON, R. G., HUNT, L., & SULLIVAN, J. J. A clinical study of premenstrual tension. *American Journal of Obstetrics and Gynecology*, 1953, **65**, 1182-1191.

RIBEIRO, A. L. Menstruation and crime. *British Medical Journal*, 1962, **1**, 640.

RICHTER, C. P. Periodic phenomena in man and animals: Their relation to neuroendocrine mechanisms (a monthly or near monthly cycle). In R. P. Michael (Ed.), *Endocrinology and human behavior*. London, Oxford University Press, 1968.

You may want to add the Dalton sources and the Ribeiro article to your list of bibliographic sources.

Based on the example of Leshner's book, using a tertiary source as the third step in your research process can:

1.) further define and clarify your subject;

2.) provide you with a list of primary sources on your subject;

3.) provide you with secondary sources which you can consult for a summary of research and additional primary sources.

At this point you may begin to read some of the primary sources, or you can use the citations you already have to expand your search for information as is illustrated in the next chapter.

Go to page 3 of the Colored Section to complete Assignment III.

## CHAPTER IV. LOCATING PRIMARY LITERATURE - AUTHOR APPROACH

From the bibliography on premenstrual syndrome in Leshner's book, and from the bibliography in Parlee's review article you developed a list of primary sources on premenstrual syndrome and its relationship to crime. These references provide you with names of researchers who have gathered the kind of information you need. An examination of the references on the list you have compiled (Chapter III, p. 13), however, shows that most of them refer to research done in the 1960's or early 1970's. You need to use these known references to help you locate more recent primary articles written on the topic of premenstrual syndrome.

### Part A. Science Citation Index

Science Citation Index is the most useful tool for using known authors to locate additional primary research on a subject. Science Citation Index (SCI) is made up of three parts: the Citation Index, the Source Index, and the Permuterm Subject Index. In this section, only the first two parts are discussed.

### Citation Index

When an earlier document is included in the bibliography of another document written at a later time, the earlier document is said to be "cited" by the later document. Therefore, Parlee's 1973 article in Psychological Bulletin cited Dalton's 1964 book called The premenstrual syndrome (See Figure 10, Chapter III). Parlee cited Dalton's book, because the information in the book was pertinent to the subject of her article. The Citation Index is based on this principle: authors cite, in their bibliographies, other authors who wrote on a similar subject at an earlier time.

The Citation Index of SCI is produced each year from an examination of the bibliographies of articles in about 2500 journals. It is arranged alphabetically by the names of the authors who appear in these bibliographies. Figure 11 shows how the Dalton book, cited by Parlee, would appear in the 1973 Citation Index.

Figure 11. Excerpts from article of M. B. Parlee.

*Psychological Bulletin*
1973, Vol. 80, No. 6, 454-465

# THE PREMENSTRUAL SYNDROME[1]

MARY BROWN PARLEE[2]

*Radcliffe Institute*

Psychological studies of the premenstrual syndrome are discussed in four r
logical categories: (*a*) studies reporting a positive correlation between sp
havioral acts and phase of the menstrual cycle; (*b*) those using retrospect
tionnaires concerning symptom and mood changes; (*c*) studies involving da
(self-) ratings of various behaviors, symptoms, and moods; and (*d*)
analyses of verbal material gathered in an unstructured situation through
cycle. The scientific status of the hypothesis of a premenstrual syndrome
sidered, together with more general topics—in particular the question of
groups, the choice of a base line for describing changes in behavior, and
ficulties involved in physiological explanations of psychological phenomen
consideration is given to publication practices of psychological journals
affect the kind of scientific information available on behavioral changes as
with the menstrual cycle.

Considerable biological evidence is now available to support Seward's (1934) observation that "Rhythm is a universal characteristic of natural phenomena [p. 153]." In human beings, circadian rhythms have been reported to exist in a variety of processes including cell division, adrenal cortical activity, and glucose tolerance, as well as in sleeping and waking, pain tolerance, and susceptibility to asthmatic attacks (Luce, 1970). Cyclic changes with periods of greater than 24 hours are also well

ports of behavioral changes
menstrual cycle. Such studi
important for at least tw
being that psychological cl
ing the menstrual cycle are
significant to many wom
appropriate topic for psy
The second reason, howev
contribution to the body
edge, but in the fact that
logical and theoretical issu

## REFERENCES

ABRAMSON, M., & TORGHELE, J. R. Weight, tempe
ture changes, and psychosomatic symptomatology
relation to the menstrual cycle. *American Journa
Obstetrics and Gynecology*, 1961, **81**, 223-232.

ALTMAN, M., KNOWLES, E., & BULL, H. D. A psyc
somatic study of the sex cycle in women. *Psyc
somatic Medicine*, 1941, **3**, 199-224.

BALINT, M. A contribution to the psychology of m
struation. *Psychoanalytic Quarterly*, 1937, **6**, 346-3

BARDWICK, J. M. *Psychology of women: A study of b
cultural conflicts*. New York: Harper & Row, 19

BENEDEK, T. An investigation of the sexual cycle
women: Methodologic considerations. *Archives
General Psychiatry*, 1963, **8**, 311-322.

BENEDEK, T., & RUBENSTEIN, B. B. The correlati
between ovarian activity and psychodynamic p

DALTON, K. Menstruation and accidents. *Br
Medical Journal*, 1960, **2**, 1425-1426. (b)

DALTON, K. Menstruation and crime. *British Me
Journal*, 1961, **2**, 1752-1753.

DALTON, K. *The premenstrual syndrome*. Springfi
Ill.: Charles C. Thomas, 1964.

DALTON, K. The influence of mother's menstruation
her child. *Proceedings of the Royal Society of Medic
1966, **59**, 1014.

EICHNER, E., & WALTNER, C. Premenstrual tensi
*Medical Times*, 1955, **83**, 771-779.

FERGUSON, J. H., & VERMILLION, M. B. Premenstr
tension: Two surveys of its prevalence and a desc
tion of the syndrome. *Obstetrics and Gynecol
1957, **9**, 615-619.

APPEARANCE OF K. DALTON IN
1973 CITATION INDEX OF SCI.

DALTON, K.....
64 PREMENSTRUAL SYNDROME
Parlee, M. B. Psychol Bull 80 454 73

Dalton's book, written in 1964, was cited by Parlee in her 1973 article in Psychological Bulletin.

To use the Citation Index in the search for current primary articles on premenstrual syndrome you need to use known sources from the bibliographical list (Chapter III, p. 13) you have already compiled. Two pertinent sources already located in the search for information on premenstrual syndrome are:

Backstrom, T. and Carstensen H. "Estrogen and progesterone in plasma in relation to premenstrual tension." Journal of Steroid Biochemistry, 1974, 5, 257-260; and

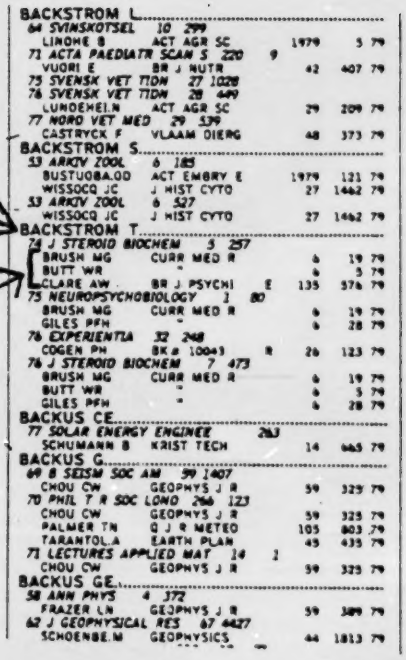
Dalton, K. The premenstrual syndrome. Springfield, Ill. Charles C. Thomas, 1964.

20

Figure 12. Citation Index of SCI, 1979.
Entry under Backstrom, T.

Full titles for journals are listed in the annual Science Citation Index Guide and List of Source Publications.

Articles which included Backstrom's article in their bibliographies



```
BACKSTROM L
 64 SVIANSKOTSEL  10  299
   LINDME B          ACT AGR SC          1979    5 79
 71 ACTA PAEDIATR SCAN S  220    9
   VUORI E           BR J NUTR             42  407 79
 75 SVENSK VET TIDN  27 1028
 76 SVENSK VET TIDN  28  449
   LUNDEHEIM         ACT AGR SC            29  209 79
 77 NORD VET MED  29  539
   CASTRYCK F        VLAAM DIERG           48  373 79
BACKSTROM S
 53 ARKIV ZOOL  6  185
   BUSTUOBA OD       ACT EMBRY E         1979  121 79
   WISSOCQ JC        J HIST CYTO           27 1462 79
 53 ARKIV ZOOL  6  527
   WISSOCQ JC        J HIST CYTO           27 1462 79
BACKSTROM T
 74 J STEROID BIOCHEM  5  257
   BRUSH MG          CURR MED R             6   19 79
   BUTT WR           "                      6    5 79
   CLARE AW          BR J PSYCHI   E      135  576 79
 75 NEUROPSYCHOBIOLOGY  1  80
   BRUSH MG          CURR MED R             6   19 79
   GILES PFM         "                      6   28 79
 76 EXPERIENTIA  32  248
   COGEN PH          BK # 10043    R       26  123 79
 76 J STEROID BIOCHEM  7  473
   BRUSH MG          CURR MED R             6   19 79
   BUTT WR           "                      6    5 79
   GILES PFM         "                      6   28 79
BACKUS CE
 77 SOLAR ENERGY ENGINEE  263
   SCHUMANN B        KRIST TECH            14  665 79
BACKUS G
 69 B SEISM SOC AM  59 1407
   CHOU CW           GEOPHYS J R           59  329 79
 70 PHIL T R SOC LOND  266  123
   CHOU CW           GEOPHYS J R           59  329 79
   PALMER TN         Q J R METEO          105  803 79
   TARANTOL A        EARTH PLAN            45  435 79
 71 LECTURES APPLIED MAT  14  1
   CHOU CW           GEOPHYS J R           59  329 79
BACKUS GE
 58 ANN PHYS  4  372
   FRAZER LN         GEOPHYS J R           59  389 79
 62 J GEOPHYSICAL RES  67 4427
   SCHOENBE M        GEOPHYSICS            44 1813 79
```

Figure 12 shows the results of looking under Backstrom, T. in the Citation Index of SCI for 1979. Backstrom's 1974 article in Journal of Steroid Biochemistry appeared in the bibliographies of three articles in 1979. Those articles were:

1.) by M. G. Brush in Current Medical Research and Opinion, volume 6, p. 19+, 1979;

2.) by W. R. Butt in Current Medical Research and Opinion, volume 6, p. 5+, 1979;

3.) by A. W. Clare in British Journal of Psychiatry, volume 135, p. 576+ 1979.

Figure 13 shows the results of looking under Dalton, K. in the Citation Index of SCI for 1979. Dalton's 1964 book, The premenstrual syndrome, appeared in the bibliographies of 5 articles in 1979. These articles were:

1.) by M. G. Brush in Current Medical Research and Opinion, volume 6, p. 19+, 1979.

2.) by A. W. Clare in British Journal of Psychiatry, volume 135, p. 576+, 1979.

3.) by A. W. Clare in Current Medical Research and Opinion, volume 6, p. 11+, 1979.

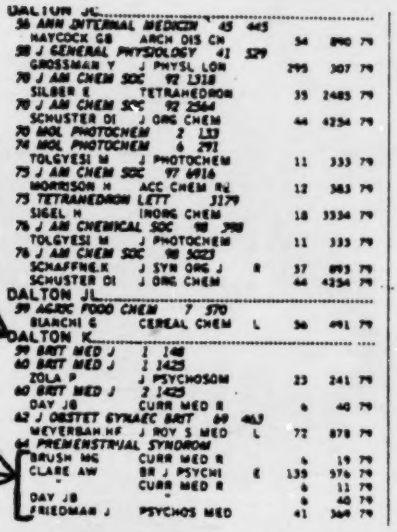
4.) by J. B. Day in Current Medical Research and Opinion, volume 6, p. 40+, 1979.

5.) by J. Friedman in Psychosomatic Medicine, volume 41, p. 369+, 1979.

Figure 13. Citation Index of SCI 1979.
Entry under Dalton, K.

Full titles for journals are listed in the annual Science Citation Index Guide and List of Source Publications.

Articles which included Dalton's book in their bibliographies


DALTON JC
56 ANN INTERNAL MEDICIN 45 445
HAYCOCK GB ARCH DIS CH 54 890 79
38 J GENERAL PHYSIOLOGY 41 529
GROSSMAN Y J PHYSL LON 295 307 79
70 J AM CHEM SOC 92 1318
SILBER E TETRAHEDRON 35 2483 79
70 J AM CHEM SOC 92 2564
SCHUSTER DI J ORG CHEM 44 4254 79
70 MOL PHOTOCHEM 2 133
74 MOL PHOTOCHEM 6 291
TOLGYESI M J PHOTOCHEM 11 333 79
75 J AM CHEM SOC 97 6916
MORRISON H ACC CHEM RE 12 383 79
75 TETRAHEDRON LETT 3179
SIGEL H INORG CHEM 18 3334 79
76 J AM CHEMICAL SOC 98 3988
TOLGYESI M J PHOTOCHEM 11 333 79
76 J AM CHEM SOC 98 5023
SCHAFFNER K J SYN ORG J R 37 893 79
SCHUSTER DI J ORG CHEM 44 4254 79
DALTON JL
59 AGRIC FOOD CHEM 7 570
BIANCHI G CEREAL CHEM L 56 491 79
DALTON K
39 BRIT MED J 1 148
60 BRIT MED J 1 1425
ZOLA P J PSYCHOSOM 23 241 79
60 BRIT MED J 2 1425
DAY JB CURR MED R 6 40 79
62 J OBSTET GYNAEC BRIT 69 463
WEYERBAH HF J ROY S MED L 72 878 79
64 PREMENSTRUAL SYNDROM
BRUSH MG CURR MED R 6 19 79
CLARE AW BR J PSYCHI E 135 576 79
CURR MED R 6 11 79
DAY JB 6 40 79
FRIEDMAN J PSYCHOS MED 41 369 79

Source Index

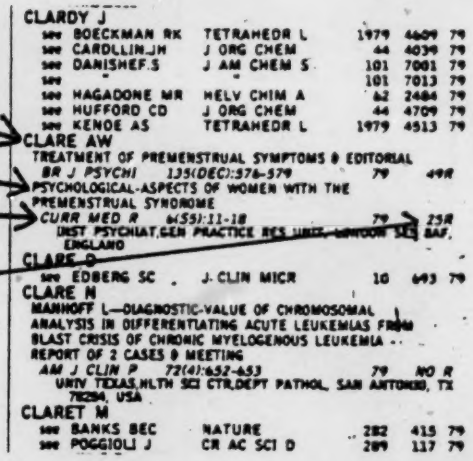
To learn more about the articles by the authors who cited Backstrom and Dalton in their bibliographies you use the Source Index of SCI. The Source Index is an alphabetical listing by name of all the authors whose article bibliographies were examined to produce the Citation Index. For example, Dalton, who was cited in Parlee's bibliography, appeared in the 1973 Citation Index. Parlee, who cited Dalton, appears in the 1973 Source Index. And, since A. W. Clare cited Backstrom and Dalton (See Figures 12 and 13), Clare appears in the 1979 Source Index:

Figure 14. SCI Source Index, 1979.
Entry under Clare, A. W.

Article title

Journal title, volume, pages, date

Number of bibliographical references in the articles


CLARDY J
BOECKMAN RK TETRAHEDR L 1979 4609 79
CARDELLINA JH J ORG CHEM 44 4039 79
DANISHEFS J AM CHEM S 101 7001 79
101 7013 79
HAGADONE MR HELV CHIM A 62 2484 79
HUFFORD CD J ORG CHEM 44 4709 79
KENOE AS TETRAHEDR L 1979 4513 79
CLARE AW
TREATMENT OF PREMENSTRUAL SYMPTOMS 0 EDITORIAL
BR J PSYCHI 135(DEC):576-579 79 49R
PSYCHOLOGICAL-ASPECTS OF WOMEN WITH THE PREMENSTRUAL SYNDROME
CURR MED R 6(55):11-18 79 25R
INST PSYCHIAT,GEN PRACTICE RES UNIT, LONDON SE5 8AF, ENGLAND
CLARE D
EDBERG SC J CLIN MICR 10 693 79
CLARE M
MANHOFF L--DIAGNOSTIC-VALUE OF CHROMOSOMAL ANALYSIS IN DIFFERENTIATING ACUTE LEUKEMIAS FROM BLAST CRISIS OF CHRONIC MYELOGENOUS LEUKEMIA - REPORT OF 2 CASES 0 MEETING
AM J CLIN P 72(4):652-653 79 NO R
UNIV TEXAS,HLTH SCI CTR,DEPT PATHOL, SAN ANTONIO, TX 78284, USA
CLARET M
BANKS BEC NATURE 282 415 79
POGGIOLI J CR AC SCI D 289 117 79

Notice that the Source Index gives you additional information on the Clare articles you located in the Citation Index. The article in volume 6 of Current Medical Research and Opinion is entitled "Psychological aspects of women with the premenstrual syndrome" and has a bibliography which includes 25 references (one of which, as you know from the Citation Index, is the Dalton book). Clare's article is exactly relevant to your topic and represents current primary research.

You could look up the other author' names (found by using the Citation Index) in the Source Index to identify additional articles.

To carry the search even further, you could look up A. W. Clare in the 1980 Citation Index. This would tell you who cited Clare's article from Current Medical Research and Opinion. You could then follow up on these authors in the Source Index.

The steps for using Science Citation Index to conduct an author search for primary literature on a scientific topic are:

1.) Compile a list of authors' names from bibliographies you located in encyclopedias and tertiary and secondary sources (Call these Authors I).

2.) Check each Author I's name in the Citation Index of SCI for each year since that author's article was published. This will give you a list of authors who cited each Author I in an article (Call these Authors II).

3.) Check each Author II in the Source Index to find the full title of each article and the number of references in each article bibliography.

4.) Go back to the Citation Index and check each Authors II's name for each year since that author's article was published. This will give you a list of authors who cited each Author II in an article (Call these Authors III). This cycling process can continue until you are using the latest available volumes of SCI. You will usually discover that a certain number of names keep reappearing. These will be the key researchers in your subject area.

Go to page 4 of the Colored Section to Complete Assignment IVA.

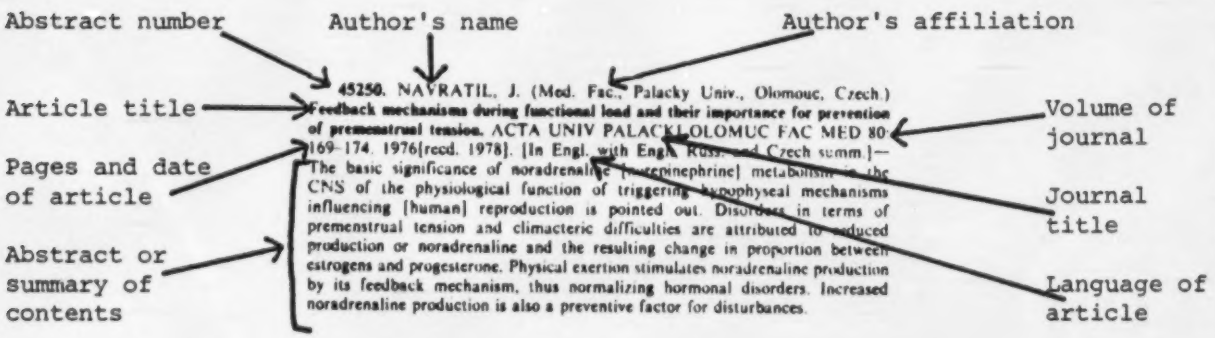
CHAPTER IV. LOCATING PRIMARY LITERATURE - AUTHOR APPROACH

Part B. Biological Abstracts

A second tool useful in finding additional primary sources from some known author's name is Biological Abstracts.

Bio. Abs. is made up primarily of abstracts. An abstract in Bio. Abs. tells you: the author(s) of the document; the article title; the journal title, volume, date, and pages; the address of the major author; the language the document is in; and, briefly, what major ideas the document contains (See Figure 15).

Figure 15. Abstract from Biological Abstracts (vol. 66, 1978).

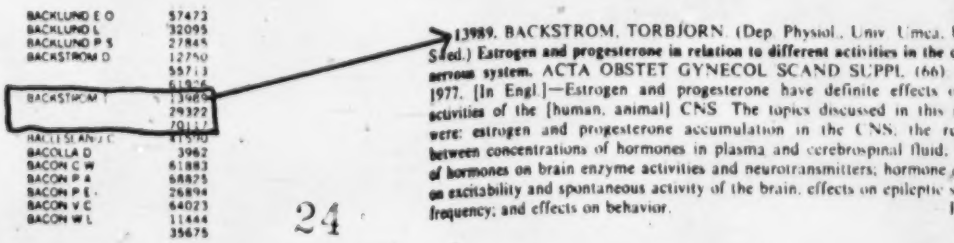

Abstract number
Author's name
Author's affiliation
45250. NAVRATIL, J. (Med. Fac., Palacky Univ., Olomouc, Czech.)
Article title
Feedback mechanisms during functional load and their importance for prevention of premenstrual tension. ACTA UNIV PALACKI OLOMUC FAC MED 80: 169-174. 1976[recd. 1978]. [In Engl. with Engl. Russ. and Czech summ.]—
Pages and date of article
The basic significance of noradrenaline [norepinephrine] metabolism in the CNS of the physiological function of triggering hypophyseal mechanisms influencing [human] reproduction is pointed out. Disorders in terms of premenstrual tension and climacteric difficulties are attributed to reduced production of noradrenaline and the resulting change in proportion between estrogens and progesterone. Physical exertion stimulates noradrenaline production by its feedback mechanism, thus normalizing hormonal disorders. Increased noradrenaline production is also a preventive factor for disturbances.
Abstract or summary of contents
Volume of journal
Journal title
Language of article

The two things that make Bio. Abs. such an important research tool are its comprehensiveness and the variety of ways it provides access to documents. Bio. Abs. not only includes major journals from all over the world but also many society publications, regional journals, and U. S. government documents. It covers all areas of biological sciences, including behavioral science, biochemistry, botany, physiology, nutrition, agriculture, toxicology, veterinary science, etc. There are close to 150,000 abstracts in Bio. Abs. a year.

There are five different indexes that accompany each semi-monthly issue of Bio. Abs. and provide acc to the abstracts, and then to the documents themselves. Semi-monthly indexes and abstracts are cumulated into a volume every six months. Bio. Abs. for 1978, for example, consists of volumes 65 and 66.

For our purposes in this chapter, it is the Author Index of Bio. Abs. which is useful. The Author Index of Bio. Abs. is an alphabetical listing of all the major, second, third, etc. authors named in the abstracts (See Figure 16). Following each author's name are abstract numbers assigned to the articles he/she wrote.

Figure 16. Bio. Abs. Author Index, Volume 66, 1978


BACKLUND E O 57473
BACKLUND L 32095
BACKLUND P S 27845
BACKSTROM D 12750
55713
61926
BACKSTROM T 13989
29322
70117
HALLESLAN J C 61590
BACOLLA D 3962
BACON C W 61883
BACON P A 68825
BACON P E 26894
BACON V C 64023
BACON W L 11444
35675
13989. BACKSTROM, TORBJORN (Dep. Physiol., Univ. Umea, S-ed.) Estrogen and progesterone in relation to different activities in the c nervous system. ACTA OBSTET GYNECOL SCAND SUPPL (66) 1977. [In Engl.]—Estrogen and progesterone have definite effects o activities of the [human, animal] CNS. The topics discussed in this re were: estrogen and progesterone accumulation in the CNS; the rel between concentrations of hormones in plasma and cerebrospinal fluid; of hormones on brain enzyme activities and neurotransmitters; hormone on excitability and spontaneous activity of the brain; effects on epileptic s frequency; and effects on behavior.

24

From Figure 16 notice that T. Backstrom is the author of the articles with the abstract numbers 13989, 29322, and 70117.

Looking up each abstract number in the Abstract Sections for Volume 66 will give you full information about the articles written by Backstrom. The Author Index is useful in your search for information on the premenstrual syndrome, because it allows you to check under the authors' names you discovered in your earlier search to see if they have written more recent material on your subject. T. Backstrom is one of the authors listed in your bibliography (Figure 10, Chapter III). The Author Index to Volume 66, 1978 of Bio. Abs. leads you to a more recent article by this author on estrogen, progesterone, and their effects.

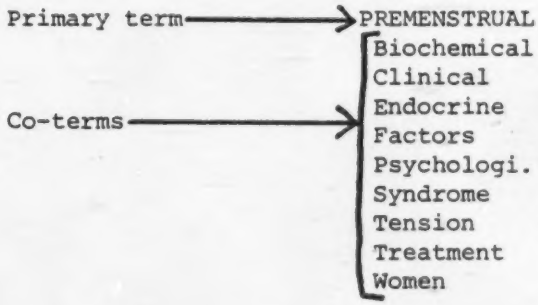
Go to page 5 of the
Colored Section to
Complete Assignment IVB.

## CHAPTER V. LOCATING CURRENT PRIMARY LITERATURE - SUBJECT APPROACH

In Chapter IV we used known authors' names to locate current primary literature on the subject of premenstrual syndrome. In this chapter we will use SCI and Bio. Abs. as subject indexes to locate primary literature.

### Part A. Science Citation Index - Permuterm Subject Index

The Permuterm Subject Index of SCI is composed of words from the titles of the books, chapters, government publications, and journal articles indexed by SCI. It is organized alphabetically by "primary terms," or significant words from the titles. Each primary term is then associated with "co-terms.' In the 1979 SCI Subject Index the word "premenstrual" appears as a primary term in the following way:




Not all words from document titles are primary terms. For example, if you look in the 1979 SCI Subject Index under "syndrome" you would find the following:

SYNDROME
See stop lists

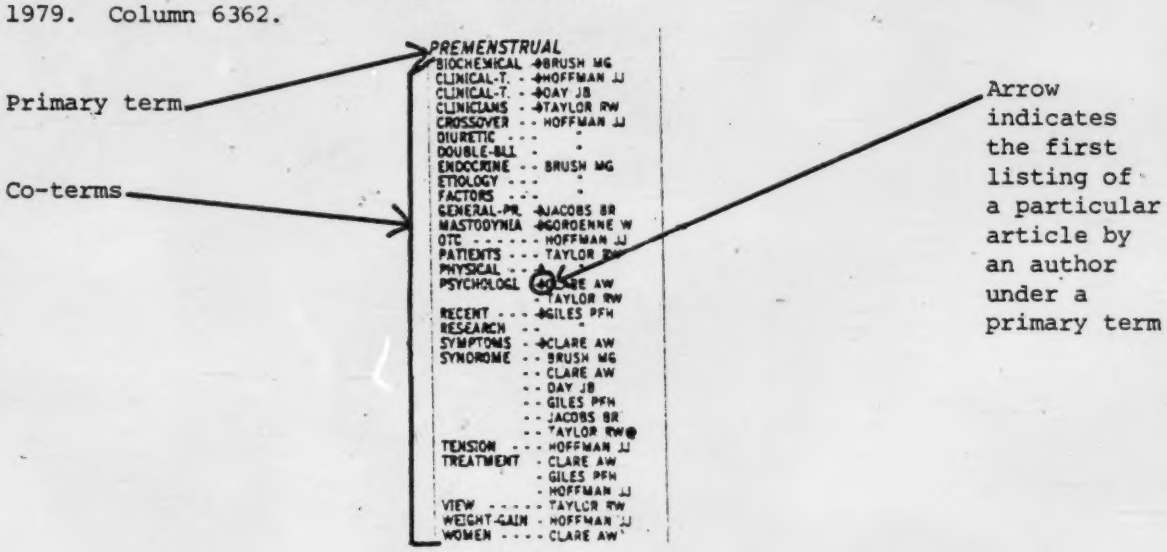
Stop lists, which appear at the front of each volume of the SCI Permuterm Subject Index, are lists of words from titles which are too general to be useful for a subject search. The word "syndrome" is a "semi-stop" word. This means it does not appear as a primary term but will appear under primary terms as a co-term. "Full-stop" words are words such as "a," "to," or "of." These words do not appear as either primary or co-terms. Sometimes, in SCI Permuterm Subject Index, two words are taken together to form a primary term. In this case the two words will be hyphenated. An example is "psychological aspects," which appears in SCI Permuterm Subject Index as PSYCHOLOGICAL - ASP.

The thing to remember in using SCI Permuterm Subject Index is that it is made up only of words which actually appear in the titles of various documents. Therefore, when you look under "premenstrual" in the SCI Permuterm Subject Index it will lead you only to documents whose titles include the word "premenstrual." As a result, you will probably want to search the SCI Subject Index under more than one term to do a complete subject search.

Suppose we use the 1979 SCI Permuterm Subject Index to look for information on premenstrual syndrome and its relationship to crime in women. The logical place to begin would be to look in the Subject Index under "premenstrual." We might also

check under subject headings that were useful in the card catalog (Chapter II), or under words from some of the article titles we have already found.

Figure 17. SCI Permuterm Subject Index, 1979. Column 6362.

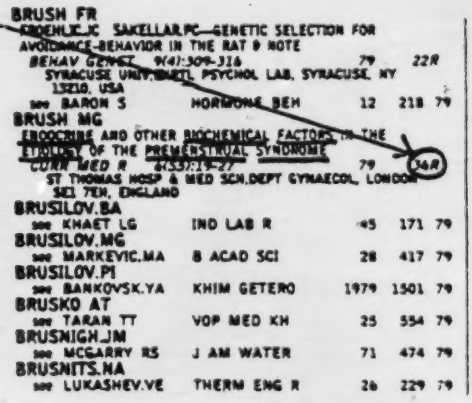

Primary term
Co-terms
Arrow indicates the first listing of a particular article by an author under a primary term
PREMENSTRUAL
BIOCHEMICAL →BRUSH MG
CLINICAL-T. - →HOFFMAN JJ
CLINICAL-T. - →DAY JB
CLINICIANS - →TAYLOR RW
CROSSOVER - - HOFFMAN JJ
DIURETIC - - -
DOUBLE-BLI -
ENDOCRINE - - BRUSH MG
ETIOLOGY - - -
FACTORS - - -
GENERAL-PR →JACOBS BR
MASTODYNIA →GOROENNE W
OTC - - - - - - HOFFMAN JJ
PATIENTS - - - TAYLOR RW
PHYSICAL - -
PSYCHOLOGI →CLARE AW
TAYLOR RW
RECENT - - - →GILES PFH
RESEARCH - -
SYMPTOMS - →CLARE AW
SYNDROME - - BRUSH MG
- - CLARE AW
- - DAY JB
- - GILES PFH
- - JACOBS BR
- - TAYLOR RW
TENSION - - - HOFFMAN JJ
TREATMENT - CLARE AW
- GILES PFH
- HOFFMAN JJ
VIEW - - - - - TAYLOR RW
WEIGHT-GAIN - HOFFMAN JJ
WOMEN - - - - CLARE AW

"Premenstrual" appears in the Subject Index as a primary term with several co-terms listed after it. Notice that after each co-term there is an author's (or several) authors') name listed. Therefore, A. W. Clare wrote an article with the words "premenstrual" and "symptoms" in the title. J. J. Hoffmann wrote an article with the words "premenstrual" and "tension" in the title, etc. An arrow before the author's name indicates the first listing of a particular article by that author under the primary term. For example, M. G. Brush's name appears three times under the primary term "premenstrual," but the arrow appears in front on only the first listing, opposite the word "biochemical." M. G. Brush, therefore, wrote only one article whose title contains the word "premenstrual." The same article title includes the words "biochemical," "endocrine," and "syndrome." A. W. Clare's name appears four times, but, in two cases, is preceded by an arrow. Two article titles by A. W. Clare contain the word "premenstrual," in one case in connection with the word "psychological" and in the other case in connection with the word "symptoms." The words "syndrome" and "treatment" also appear in one or both of the article titles.

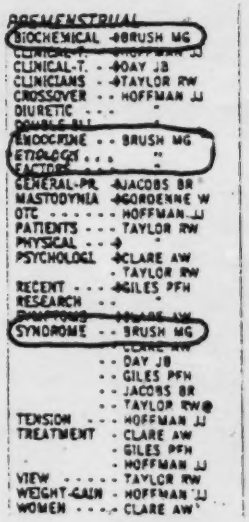
To do an exhaustive search in the 1979 SCI Permuterm Subject Index on premenstrual syndrome you would want to examine all the articles written by authors listed under the primary term "premenstrual." Or you might want to be more selective and examine only those articles by authors listed under the primary term "premenstrual" in connection with certain co-terms, such as "syndrome" or "tension." Whichever authors you choose to pursue you will need to turn to the Source Index of SCI (already mentioned in Chapter IV, Part A), which is an alphabetical listing, by author's name, of all articles examined for citations. Figure 14 in Chapter IV, Section A, p. 18 shows what you find under A. W. Clare in the 1979 Source Index. Figure 18 shows the 1979 Source Index under M. G. Brush:

Figure 18. SCI Source Index, 1979, column 19081. SCI Subject Index, 1979, column 6362.

Number of bibliographic references in Brush's article.



BRUSH FR
KROEHLICH JC SAKELLAR PC—GENETIC SELECTION FOR AVOIDANCE-BEHAVIOR IN THE RAT 9 NOTE
BEHAV GENET 9(4):309-316 79 22R
SYRACUSE UNIV, DEPT PSYCHOL LAB, SYRACUSE, NY 13210, USA
>>> BARON S HORMONE BEH 12 218 79
BRUSH MG
ENDOCRINE AND OTHER BIOCHEMICAL FACTORS IN THE ETIOLOGY OF THE PREMENSTRUAL SYNDROME
CURR MED R 4(53):19-27 79 34R
ST THOMAS HOSP & MED SCH, DEPT GYNAECOL, LONDON SE1 7EH, ENGLAND
BRUSILOV.BA
>>> KHAET LG IND LAB R 45 171 79
BRUSILOV.MG
>>> MARKEVIC.MA B ACAD SCI 28 417 79
BRUSILOV.PI
>>> BANKOVSK.YA KHIM GETERO 1979 1501 79
BRUSKO AT
>>> TARAN TT VOP MED KH 25 554 79
BRUSNIGH.JM
>>> MCGARRY RS J AM WATER 71 474 79
BRUSNITS.NA
>>> LUKASHEV.VE THERM ENG R 26 229 79



PREMENSTRUAL
BIOCHEMICAL - BRUSH MG
CLINICAL-T. - DAY JB
CLINICIANS - TAYLOR RW
CROSSOVER - HOFFMAN JJ
DIURETIC - -
ENDOCRINE - BRUSH MG
ETIOLOGY - "
FACTORS - "
GENERAL-PR. - JACOBS BR
MASTODYNIA - GORDONNE W
OTC - HOFFMAN JJ
PATIENTS - TAYLOR RW
PHYSICAL - "
PSYCHOLOGL - CLARE AW
- TAYLOR RW
RECENT - GILES PFH
RESEARCH - "
SYNDROME - BRUSH MG
- DAY JB
- GILES PFH
- JACOBS BR
- TAYLOR RW
TENSION - HOFFMAN JJ
TREATMENT - CLARE AW
- GILES PFH
- HOFFMAN JJ
VIEW - TAYLOR RW
WEIGHT-GAIN - HOFFMAN JJ
WOMEN - CLARE AW

To locate the articles by Clare and Brush you need the British Journal of Psychiatry, volume 135 and Current Medical Research and Opinion, volume 55 ( a list of the full titles of journals is in the annual Science Citation Index Guide and List of Source Publications). If the CSB-SJU Periodical List indicates that these journals are not available at CSB or SJU you can order copies of the articles through MINITEX. Clare's and Brush's articles, each of which includes many bibliographic references (See Figures 14 and 18), will refer you to additional books, authors, etc. on premenstrual syndrome. You could also use the 1980 Citation Index of SCI to see who, in 1980, cited the Clare and Brush articles in more recent articles.

Go to page 6 of the Colored Section to complete Assignment VA

CHAPTER V. LOCATING CURRENT PRIMARY LITERATURE - SUBJECT APPROACH

Part B. Biological Abstracts

The best research tool which provides subject access to current primary literature in biological subjects is BIOLOGICAL ABSTRACTS (Bio. Abs.). In addition to the Bio. Abs. Author Index which we used in Chapter IV, Part B, Bio. Abs. has four other indexes: Subject Index, Concept Index, Biosystematic Index, and Generic Index. In this section we will look at the Subject and Concept Indexes in detail and deal briefly with the Biosystematic and Generic Indexes.

Bio. Abs. Subject Index

The Bio. Abs. Subject Index is similar to the SCI Permuterm Subject Index in that it is composed of significant words from document titles. In addition, however, in drawing up the Subject Index for Bio. Abs., significant words are also taken from the document abstracts. This means that each document will appear in as many places in the Bio. Abs. Subject Index as there are significant words in the title and abstract. Figure 19 shows the ways in which T. Backstrom's article, "Estrogen and progesterone in plasma in relation to premenstrual tension" appears in the Subject Index for Volume 66, 1978. Each underlined word is a significant word under which Backstrom's article is entered in the Subject Index.

Figure 19. From Bio. Abs. Subject Index, Volume 66, 1978.

| | | | | |
|---|---|---|---|---|
| 1.) | SYSTEM REVIEW HUMAN | ANIMAL | EPILEPTIC SEIZURE BEHAVIOR BR | 13989 |
| 2.) | IMAL EPILEPTIC SEIZURE | BEHAVIOR | BRAIN ENZYMES NEURO TRAN | 13989 |
| 3.) | EPTIC SEIZURE BEHAVIOR | BRAIN | ENZYMES NEUROTRANSMITTERS | 13989 |
| 4.) | TRENT ACTIVITIES IN THE | CENTRAL | NERVOUS SYSTEM REVIEW HUM | 13989 |
| 5.) | REVIEW HUMAN ANIMAL | EPILEPTIC | SEIZURE BEHAVIOR BRAIN ENZ | 13989 |
| 6.) | SEIZURE BEHAVIOR BRAIN | ENZYME | NEURO TRANSMITTERS/ ESTRO | 13989 |
| 7.) | NEUROTRANSMITTERS | ESTROGEN | AND PROGESTERONE IN RELA | 13989 |
| 8.) | EHAVIOR BRAIN ENZYMES | NEURO | TRANSMITTERS / ESTROGEN AND | 13989 |
| 9.) | ITTERS/ ESTROGEN AND | PROGESTERONE | IN RELATION TO DIFFERE | 13989 |
| 10.) | NTRAL NERVOUS SYSTEM | REVIEW | HUMAN ANIMAL EPILEPTIC SEIZU | 13989 |
| 11.) | THE CENTRAL NERVOUS | SYSTEM | REVIEW HUMAN ANIMAL EPILEPT | 13989 |
| 12.) | BRAIN ENZYMES NUERO | TRANSMITTERS | / ESTROGEN AND PROGES | 13989 |

This article appears under twelve different words, some from the article title and some from the article abstract. The symbol "/" is placed directly before the word with which the article title begins. The number at the end of each line is the abstract number assigned to Backstrom's article in the Abstract Section of Bio. Abs.

Now examine Figure 20, which is a section of the Bio. Abs. Subject Index (Volume 66, 1978) under the significant word "MENSTRUAL."

| Subject Context | ▼ Keyword | | Ref. No. |
|---|---|---|---|
| IN WOMEN DURING THE | MENSTRUAL | CYCLE ESTRADIOL PROGEST | 24127 |
| OCYTES EFFECTS OF THE | | CYCLE ESTRADIOL 17-BETA | 70126 |
| PHASES OF THE NORMAL | | CYCLE HUMAN FRUSEMIDE | 51332 |
| EXCRETION DURING THE | | CYCLE HUMAN PUTRESCINE | 42842 |
| IFFERENT PHASES OF THE | | CYCLE IN NORMAL WOMEN | 15590 |
| NORMAL AND ABNORMAL | | CYCLE IN SOUTH INDIAN WO | 30316 |
| ERIOD WOMAN MAMMAL | | CYCLE NONZERO CONCEPTI | 73961 |
| D CHANGES DURING THE | | CYCLE OF THE BABOON PAPI | 33113 |
| MPERATURE DURING THE | | CYCLE OF THE PIGTAIL MAC | 38883 |
| VARIOUS STAGES OF THE | | CYCLE ON MOUSE BLASTOC | 56997 |
| NORMAL WOMEN DURING | | CYCLE ON ORAL CONTRACE | 7817 |
| ULATION ON THE HUMAN | | CYCLE OVULATION TIME STA | 73965 |
| L INVESTIGATION OF THE | | CYCLE PART 2 NEURO ENDO | 23659 |
| RABBIT HUMAN PLASMA | | CYCLE PREGNANCY/ RADIO I | 33082 |
| ESTIONNAIRE/ TOWARD A | | CYCLE SYMPTOM TYPOLOGY | 17759 |
| N IMPROVED TECHNIQUE | | CYCLE TUBAL FLUID SEMINA | 30326 |
| POST MENOPAUSAL AGE | | CYCLE TUBAL RENEWAL HO | 24366 |
| HORMONE DURING THE | | CYCLE WOMAN HORMONE D | 14056 |
| THY WOMEN DURING THE | | CYCLE/ DYNAMICS OF URIN | 38881 |
| KEYS, MACACA-MULATTA | | CYCLE/ FREQUENCY OF MAS | 7842 |
| TRACEPTIVE PREGNANCY | | CYCLE/ MEASUREMENT OF | 54066 |
| MONE DRUGS ESTROGEN | | CYCLE/ THE INFLUENCE OF | 45238 |
| OCCUS MUTANS HUMAN | | CYCLE/ VARIABILITY IN SALI | 21347 |

Figure 20. Bio. Abs. Subject Index, Volume 66, 1978.

Abstract numbers

Significant word for all titles is "MENSTRUAL"

It is important to remember the following things when using the Bio. Abs. Subject Index:

1.) The alphabetical arrangement of the Subject Index is based on the significant word or keyword, which is in the center of each line. When several lines have the same keyword, the word is omitted from all lines except the first. The arrangement for all the lines under one keyword is alphabetical by the word following the keyword;

2.) Each line is a separate title and leads to a separate abstract;

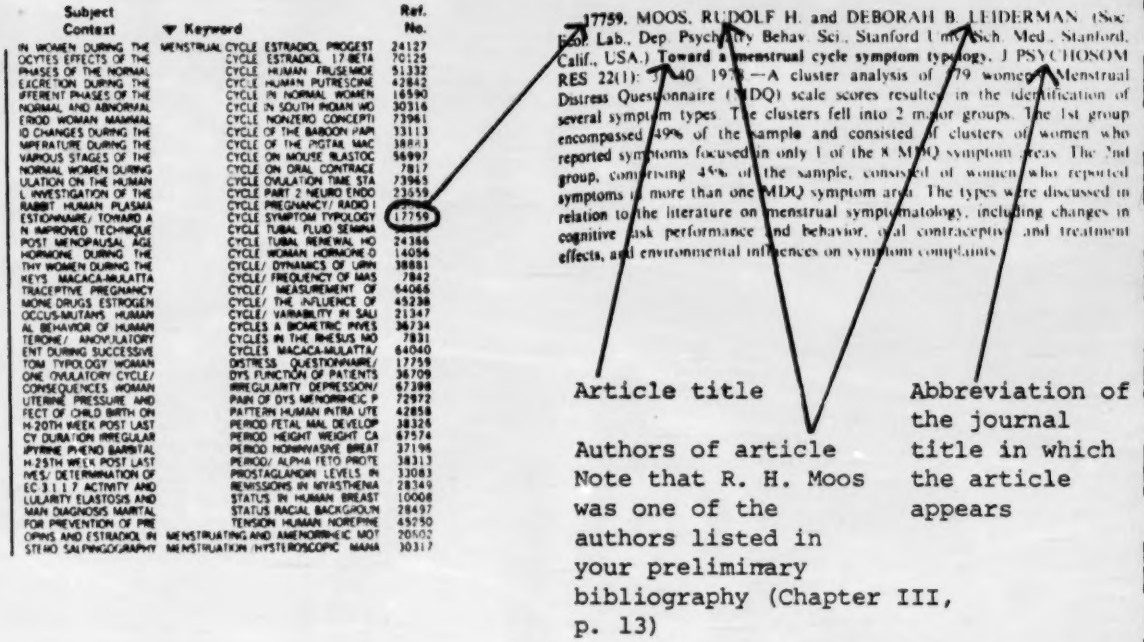
3.) Each line is made up of significant words (keywords) from the titles and abstracts and can only be a certain length. Words are sometimes cut in odd places leaving only fragments at the beginning and end of each line.

The purpose of the Subject Index is to provide you with a variety of access points to each abstract in the Bio. Abs. Abstract Section. Figure 21 shows the Bio. Abs. Subject Index under the keyword "MENSTRUAL" and one of the abstracts to which that keyword would lead you.

Figure 21.

Bio. Abs. Subject Index, Volume 66, 1978. Keyword "MENSTRUAL".

Bio. Abs. Abstract Section, Volume 66, 1978.



| Subject Context | ▼ Keyword | | Ref. No. |
|---|---|---|---|
| IN WOMEN DURING THE | MENSTRUAL | CYCLE ESTRADIOL PROGEST | 24127 |
| OCYTES EFFECTS OF THE | | CYCLE ESTRADIOL 17 BETA | 70125 |
| PHASES OF THE NORMAL | | CYCLE HUMAN FRUSEMIDE | 51332 |
| EXCRETION DURING THE | | CYCLE HUMAN PUTRESCINE | 42842 |
| IFFERENT PHASES OF THE | | CYCLE IN NORMAL WOMEN | 16590 |
| NORMAL AND ABNORMAL | | CYCLE IN SOUTH INDIAN WO | 30316 |
| EROID WOMAN MAMMAL | | CYCLE NONZERO CONCEPTI | 73961 |
| ID CHANGES DURING THE | | CYCLE OF THE BABOON PAPI | 33113 |
| MPERATURE DURING THE | | CYCLE OF THE PIGTAIL MAC | 38843 |
| VARIOUS STAGES OF THE | | CYCLE ON MOUSE BLASTOC | 56997 |
| NORMAL WOMEN DURING | | CYCLE ON ORAL CONTRACE | 7817 |
| ULATION ON THE HUMAN | | CYCLE OVULATION TIME STA | 73965 |
| L INVESTIGATION OF THE | | CYCLE PART 2 NEURO ENDO | 23559 |
| RABBIT HUMAN PLASMA | | CYCLE PREGNANCY/ RADIO I | [illegible] |
| ESTIONNAIRE/ TOWARD A | | CYCLE SYMPTOM TYPOLOGY | 17759 |
| N IMPROVED TECHNIQUE | | CYCLE TUBAL FLUID SEMINA | [illegible] |
| POST MENOPAUSAL AGE | | CYCLE TUBAL RENEWAL HO | 24366 |
| HORMONE DURING THE | | CYCLE WOMAN HORMONE O | 14056 |
| THY WOMEN DURING THE | | CYCLE/ DYNAMICS OF URIN | 38881 |
| KEYS MACACA-MULATTA | | CYCLE/ FREQUENCY OF MAS | 7842 |
| TRACEPTIVE PREGNANCY | | CYCLE/ MEASUREMENT OF | 64066 |
| MONE DRUGS ESTROGEN | | CYCLE/ THE INFLUENCE OF | 49238 |
| OCCUS-MUTANS HUMAN | | CYCLE/ VARIABILITY IN SALI | 21347 |
| AL BEHAVIOR OF HUMAN | | CYCLES A BIOMETRIC INVES | 36734 |
| TERONE/ ANOVULATORY | | CYCLES IN THE RHESUS MO | 7831 |
| ENT DURING SUCCESSIVE | | CYCLES MACACA-MULATTA/ | 64040 |
| TOM TYPOLOGY WOMAN | | DISTRESS QUESTIONNAIRE/ | 17759 |
| ONE OVULATORY CYCLE/ | | DYS FUNCTION OF PATIENTS | 36709 |
| CONSEQUENCES WOMAN | | IRREGULARITY DEPRESSION/ | 67398 |
| UTERINE PRESSURE AND | | PAIN OF DYS MENORRHEIC P | 72972 |
| FECT OF CHILD BIRTH ON | | PATTERN HUMAN INTRA UTE | 42858 |
| H 20TH WEEK POST LAST | | PERIOD FETAL MAL DEVELOP | 38326 |
| CY DURATION IRREGULAR | | PERIOD HEIGHT WEIGHT CA | 67574 |
| IPYRINE PHENO BARBITAL | | PERIOD NONINVASIVE BREAT | 37196 |
| H 25TH WEEK POST LAST | | PERIOD/ ALPHA FETO PROTE | 38313 |
| IVES/ DETERMINATION OF | | PROSTAGLANDIN LEVELS IN | 33083 |
| EC 3 1 1 7 ACTIVITY AND | | REMISSIONS IN MYASTHENIA | 28349 |
| LULARITY ELASTOSIS AND | | STATUS IN HUMAN BREAST | 10008 |
| MAN DIAGNOSIS MARITAL | | STATUS RACIAL BACKGROUN | 28497 |
| FOR PREVENTION OF PRE | | TENSION HUMAN NOREPINE | 45250 |
| OPINS AND ESTRADIOL IN | MENSTRUATING | AND AMENORRHEIC MOT | 20502 |
| STEMO SALPINGOGRAPHY | MENSTRUATION | HYSTEROSCOPIC MANA | 30317 |

17759. MOOS, RUDOLF H. and DEBORAH B. LEIDERMAN (Soc Ecol Lab., Dep Psychiatry Behav Sci., Stanford U Sch. Med., Stanford, Calif., USA.) **Toward a menstrual cycle symptom typology.** J PSYCHOSOM RES 22(1): [illegible]40 1978.—A cluster analysis of 479 women's Menstrual Distress Questionnaire (MDQ) scale scores resulted in the identification of several symptom types. The clusters fell into 2 major groups. The 1st group encompassed 49% of the sample and consisted of clusters of women who reported symptoms focused in only 1 of the 8 MDQ symptom areas. The 2nd group, comprising 45% of the sample, consisted of women who reported symptoms in more than one MDQ symptom area. The types were discussed in relation to the literature on menstrual symptomatology, including changes in cognitive task performance and behavior, oral contraceptive and treatment effects, and environmental influences on symptom complaints.

Article title

Authors of article
Note that R. H. Moos was one of the authors listed in your preliminary bibliography (Chapter III, p. 13)

Abbreviation of the journal title in which the article appears

Notice that T. Backstrom's article (abstract #13989) does not appear in the Subject Index under the keyword "MENSTRUAL." It does, however, appear under "ESTROGEN," "PROGESTERONE," and ten other keywords in the Subject Index. To make the best use of Bio. Abs. Subject Index, therefore, you must know quite a bit about your subject and some of its key concepts. It is essential to search the Subject Index under a number of significant keywords in order to get a comprehensive set of references to documents on your topic.

From keyword entries in the Bio. Abs. Subject Index it is difficult to determine whether the articles will be useful or not. For each keyword you should carefully examine each line, write down relevant abstract numbers, and go to the abstract section to examine the title and summary (See Figure 21). Some of the articles will not be useful, but others, like the Moos article in Figure 21, may be extremely valuable. Using the Bio. Abs. Subject Index can be time consuming, but the rewards of a careful search will be great.

You will have noticed by now that abstracts in Bio. Abs. give you abbreviated titles of the journals in which the articles are found. To locate a journal, or to order a copy of an article through MINITEX, you will need to know the complete title. To determine complete titles use the SERIAL SOURCES for the BIOSIS DATA BASE book which is available on a shelf near recent volumes of Biological Abstracts and at the SJU Reference desk.

Bio. Abs. Concept Index (formerly called CROSS for Computer Rearrangement of Subject Specialties)

In the Bio. Abs. Abstract Sections, the abstracts are arranged under broad subject categories like "Ecology" or "Digestive System" and then under sub-categories. This groups all abstracts on the same subject together. The Concept Index is a list of these same broad subject categories and their sub-headings. Under each subject category in the Concept Index all the abstract numbers of documents which have something to do with that subject are listed. As you can imagine, because the subject categories are broad, there are many abstract numbers listed under each one.

The best use of the Concept Index is comparison. Examine Figure 22, which is a list of the broad subject categories used in the Concept Index. Categories under which you would expect to find documents having to do with menstruation and its physiology are:

Reproductive System - Physiology, Biochemistry
Endocrine System - Gonads, Placenta

Categories under which you would expect to find documents dealing with the behavior of women, and/or crime are:

Behavioral Biology - Human Behavior
Psychiatry - Psychophysiology

Therefore, to use the Concept Index to locate documents dealing specifically with premenstrual syndrome and its possible relationship to crime in women, you should compare the abstract numbers under the above categories. Abstract numbers which fall under both Reproductive System - Physiology, Biochemistry and Psychiatry - Psychophysiology, for example, are likely to deal with your subject.

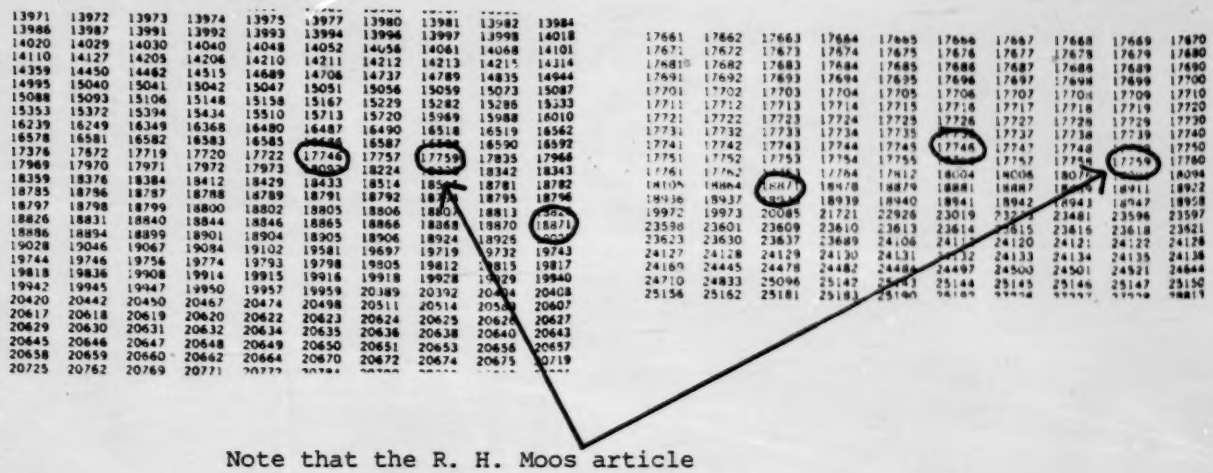
Figure 22. Subject Categories used in Concept Index.

# SECTION HEADINGS


| Heading | Page No. |
|---|---|
| Aero-Space and Underwater Biological Effects | 1221 |
| Agronomy | 1221 |
| Allergy | 1235 |
| Anatomy and Histology, General and Comparative | 1236 |
| Animal Production (includes Fur-Bearing Animals) | 1237 |
| Bacteriology, General and Systematic | 1241 |
| Behavioral Biology | 1243 |
| Biochemistry | 1248 |
| Biophysics | 1255 |
| Blood, Blood-Forming Organs and Body Fluids | 1257 |
| Bones, Joints, Fasciae, Connective and Adipose Tissue | 1267 |
| Botany, General and Systematic | 1271 |
| Cardiovascular System | 1282 |
| Chemotherapy | 1296 |
| Chordata, General and Systematic Zoology | 1301 |
| Circadian Rhythm and Other Periodic Cycles | 1309 |
| Cytology and Cytochemistry | 1309 |
| Dental and Oral Biology | 1313 |
| Developmental Biology-Embryology | 1314 |
| Digestive System | 1322 |
| Disinfection, Disinfectants and Sterilization | 1332 |
| Ecology (Environmental Biology) | 1332 |
| Economic Botany | 1357 |
| Economic Entomology (includes Chelicerata) | 1358 |
| Endocrine System | 1363 |
| Enzymes | 1383 |
| Evolution | 1392 |
| Food and Industrial Microbiology | 1393 |
| Food Technology (non-toxic studies) | 1396 |
| Forestry and Forest Products | 1402 |
| General Biology | 1405 |
| Genetics of Bacteria and Viruses | 1412 |
| Genetics and Cytogenetics | 1418 |
| Gerontology | 1429 |
| Horticulture | 1429 |
| Immunology (Immunochemistry) | 1438 |
| Immunology, Parasitological | 1466 |
| Integumentary System | 1469 |
| Invertebrata, Comparative and Experimental Morphology, Physiology and Pathology | 1471 |
| Invertebrata, General and Systematic Zoology | 1485 |
| Laboratory Animals | 1502 |
| Mathematical Biology and Statistical Methods | 1502 |
| Medical and Clinical Microbiology (includes Veterinary) | 1503 |
| Metabolism | 1514 |
| Methods, Materials and Apparatus, General | 1519 |
| Microbiological Apparatus, Methods and Media | 1522 |
| Microorganisms, General (includes Protista) | 1523 |
| Morphology and Anatomy of Plants (includes Embryology) | 1523 |
| Morphology and Cytology of Bacteria | 1524 |
| Muscle | 1525 |
| Neoplasms and Neoplastic Agents | 1530 |
| Nervous System (excludes Sense Organs) | 1577 |
| Nutrition | 1595 |
| Paleobiology | 1597 |
| Paleobotany | 1600 |
| Paleozoology | 1601 |
| Palynology | 1604 |
| Parasitology (includes Ecto- and Endoparasites) | 1605 |
| Pathology, General and Miscellaneous | 1608 |
| Pediatrics | 1609 |
| Pest Control, General (includes Plants and Animals); Pesticides; Herbicides | 1610 |
| Pharmacognosy and Pharmaceutical Botany | 1610 |
| Pharmacology | 1611 |
| Physical Anthropology; Ethnobiology | 1634 |
| Physiology and Biochemistry of Bacteria | 1635 |
| Physiology, General and Miscellaneous | 1649 |
| Phytopathology | 1649 |
| Plant Physiology, Biochemistry and Biophysics | 1665 |
| Poultry Production | 1701 |
| Psychiatry | 1702 |
| Public Health | 1741 |
| Radiation Biology | 1754 |
| Reproductive System | 1760 |
| Respiratory System | 1761 |
| Sense Organs, Associated Structures and Functions | 1763 |
| Social Biology (includes Human Ecology) | 1774 |
| Soil Microbiology | 1774 |
| Soil Science | 1776 |
| Temperature: Its Measurement, Effects and Regulation | 1784 |
| Tissue Culture, Apparatus, Methods and Media | 1787 |
| Toxicology | 1788 |
| Urinary System and External Secretions | 1813 |
| Veterinary Science | 1818 |
| Virology, General | 1819 |

Figure 23 shows the results of comparing these two categories in the Biological Abstracts Concept Index.

Figure 23. Bio. Abs. Concept Index, Volume 66, 1978.




Note that the R. H. Moos article (abstract #17759) is listed in both categories (See Figure 21, p. 26). The articles corresponding to abstract numbers 17746 and 18871 could also deal with your subject.

The Biosystematic Index and the Generic Index of Bio. Abs. are organism indexes. Although they are extremely useful when dealing with certain types of research topics (e.g., predator-prey relations in controlling deer populations) where specific groups are involved, these two indexes are not as useful as the Subject and Concept Indexes in researching premenstrual syndrome.

The Biosystematic Index is based on taxonomic classification. The arrangement of the Biosystematic Index is basically into large organism groups for which the sequence is from simple to complex. Figure 24 gives this sequence.

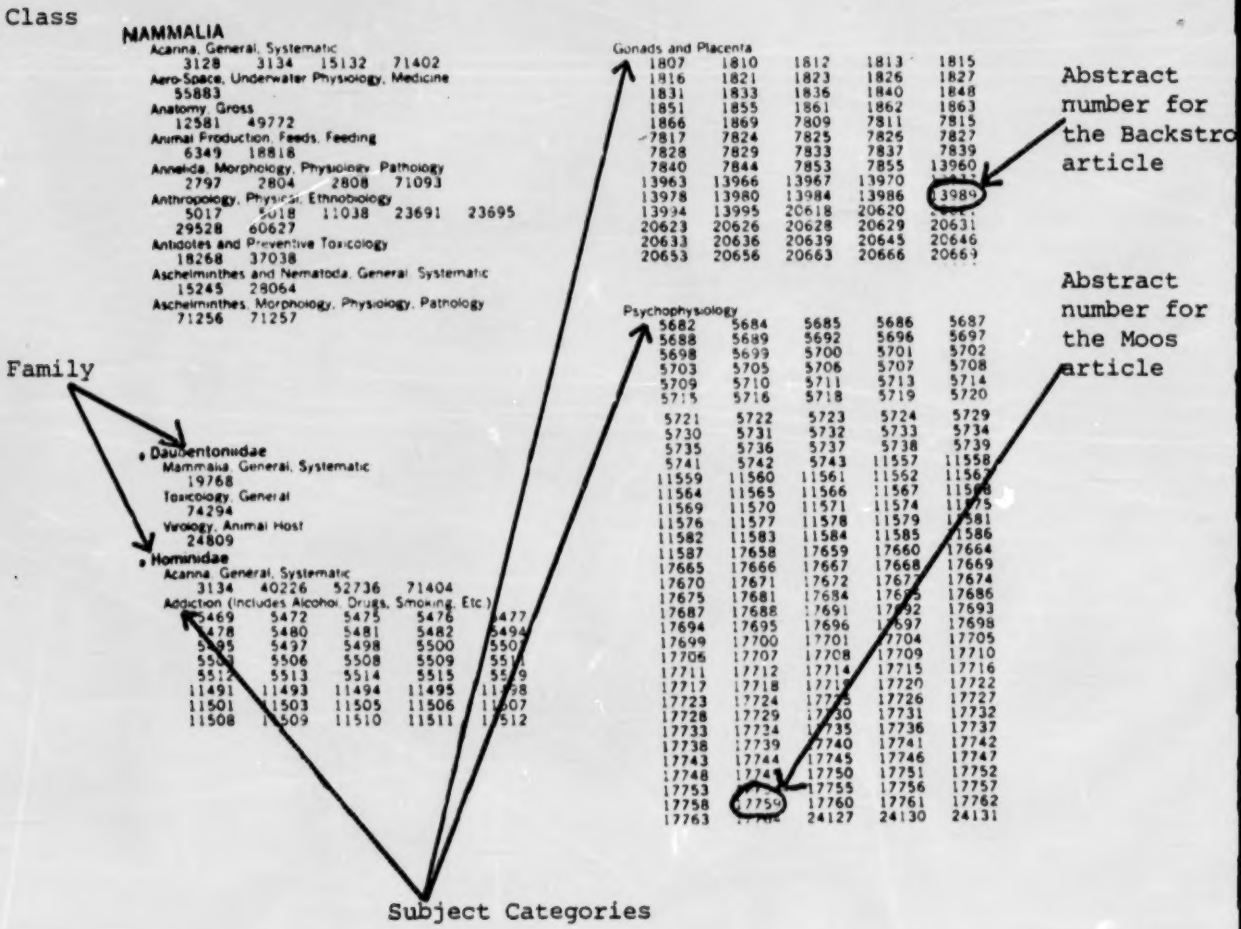
Figure 24. BIOSYSTEMATIC INDEX - SEQUENCE OF ORGANISM GROUPS

Major Taxonomic Categories Indexed in the Biosystematic Index

Organisms, General
Microorganisms, General
Viruses
Bacteria
Plantae
Cryptogamae
Algae
Fungi
Lichenes
Embryophyta
Bryophyta
Tracheophyta
+Pteridophyta
+Spermatophyta
Paleobiology
Paleobotany
Paleozoology
Animalia
Invertebrata
+Protozoa
Metazoa
Mesozoa
Porifera
Cnidaria
Ctenophora
Helminthes
+Platyhelminthes
Rhynchocoela
Acanthocephala
+Aschelminthes
Entoprocta
Phoronidea
Ectoprocta
Brachiopoda
+Mollusca
Sipunculoidea
+Annelida
Echiuroidea
Linguatulida
Tardigrada
Onychophora
+Arthropoda
Chaetognatha
Hemichordata
Pogonophora
+Echinodermata
+Chordata

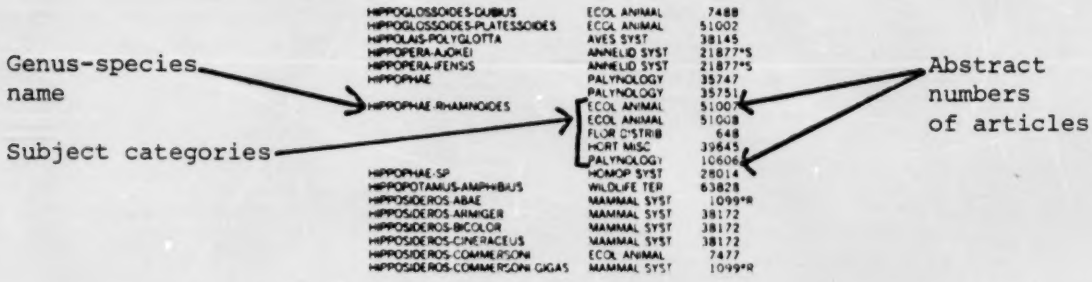
Each of these large groups is subdivided into orders, and in some cases, families. Figure 25 shows the Biosystematic Index for the class MAMMALIA. Within this class, there is the family Hominidae, or Apes and Man. Under this family, abstract numbers of documents are arranged under subject categories. Notice that the abstract number for the Backstrom article appears under the subject category "HOMONIDAE - GONADS AND PLACENTA," and the abstract number for the Moos article appears under the subject category "HOMINIDAE - PSYCHOPHYSIOLOGY." To use the Biosystematic Index you need to know where the organism in which you are interested falls in the taxonomic classification.

Figure 25. Bio. Abs. Biosystematic Index, Volume 66, 1978.



Before 1974, genus-species names of organisms were included in the Subject Index of Bio. Abs. Since then, however, genus-species names have been listed alphabetically in a separate index known as the Generic Index. Figure 26 shows a section from the Generic Index. The column on the left is made up of genus-species names arranged alphabetically. The middle column gives an abbreviated statement of the subject of the document. An explanation of what the abbreviations stand for is provided at the beginning of the Generic Index (or for earlier years, at the beginning of the Biosystematic Index). These subjects are broken into the same subject categories as those used in the Concept Index. The column on the right lists the abstract number for each article. In terms of research on premenstrual syndrome, the Generic Index is not too useful, but for researching a specific organism it can be the most effective Bio. Abs. index to use.

Figure 26. Bio. Abs. GENERIC INDEX, Volume 66, 1978.




Use of the Bio. Abs. indexes takes time and effort, but the primary sources to which it will lead make it well worth it.

Go to page 7 of the Colored Section to complete Assignment VB.

EXERCISE

SECTION

NAME

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ASSIGNMENT I. ENCYCLOPEDIAS AND DICTIONARIES

In questions 1 and 2, check to see which library you will need to use following the name of the encyclopedia or dictionary.

1. According to the bibliography under the entry Digital computer in the McGraw-Hill Encyclopedia of Science and Technology (CSB and SJU), a tertiary source in which to find additional information on this topic would be: 1.____

   A. L.C. Higbie, Associative processors
   B. E. L. Braun, Digital computer design
   C. R. K. Richards, Electronic digital systems

2. From the definition in the Encyclopedia of the Animal World (SJU) an appropriate search term on the topic lokombitsika would be: 2.____

   A. Freshwater tortoise
   B. Ant-wax
   C. Hemichordate

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ASSIGNMENT II. CARD CATALOG

Do questions 3 and 4 at the library specified.

3. Leslie Earle Arnow wrote a book which has the call number RA 784/ .A75 in the CSB Library. Using the tracings on the catalog card and the LC Subject Headings books, identify which of the following subject headings would be useful in finding additional books on the same or a related subject: 3.____

   A. Food preservation
   B. Food habits
   C. Analysis of food

4. From the cards for the following books in the card catalog at SJU, evaluate and choose which book would be most useful for providing information on Metabolism (Be sure to take all criteria for evaluation listed on page 9 into account). 4.____

   A. Philip L. Altman, Metabolism
   B. Henry Prentiss Armsby, The animal as a converter of matter and energy
   C. Eric E. Conn, Outlines of Biochemistry

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ASSIGNMENT III. TERTIARY AND SECONDARY LITERATURE

The book you will need to answer the following questions will be on Reserve in the CSB or SJU Library. Check question 5 to determine at which library to find the book. Use the same book to answer all three questions.

5. Using the book Animal form and function by Breneman (CSB), on what pages will you find information on Behavior of bees? 5.____

   A. pp. 86-90
   B. pp. 142-153
   C. pp. 282-284

6. The following authors' works are listed in the bibliography on Behavior of bees in Breneman's book. Which of these authors wrote secondary literature? 6.____

   A. C. R. Ribbands
   B. C. Donnell Turner
   C. F. E. Lutz

7. According to the bibliography on Behavior of bees, which of the following authors wrote primary literature on this subject? 7.____

   A. R. W. Hegner
   B. C. Elton
   C. Adrian M. Winner

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ASSIGNMENT IVA. AUTHOR APPROACH - SCIENCE CITATION INDEX

Science Citation Index is available only at SJU Library.

From a bibliography in a secondary source you find a reference to an article by J. E. Rash in Developmental Biology, volume 36, p. 455, 1974.

You decide to do an author search in Science Citation Index to locate more primary sources on your topic.

8. Who is the first author listed in the 1979 Citation Index of SCI who cited Rash's article? 8.____

   A. M. V. L. Bennett
   B. V. V. Chigrin
   C. G. Moyat

9. The article by the first author who cited Rash appeared in: 9.____

   A. Trends in Neuroscience, volume 95, p. 303, 1979
   B. Neurosciences Research Program Bulletin, volume 16, p. 377, 1978
   C. Bioscience, volume 44, p. 632, 1978

10. According to the Source Index of SCI, the full title of the article by the first author who cited Rash is: 10.____

   A. Gap junctions, electronic coupling and intercellular communication
   B. Headaches related to a connective tissue disorder
   C. Television and motivation of the distance learner

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ASSIGNMENT IVB. BIOLOGICAL ABSTRACTS AUTHOR INDEX LAB INSTRUCTOR

All questions from Biological Abstracts must be done at SJU.

You have found, in your research, more than one reference to articles by J. A. Fischer, all of which are useful. These articles, however, are quite old. You decide to use Biological Abstracts Author Index to see if this author has written anything more recently.

11. According to Volume 68, 1979 of Biological Abstracts Author Index, what is the first abstract number listed under Fischer's name? 11.____

A. 16420
B. 49958
C. 36758

12. What is the full title of the article to which the first abstract number was assigned? 12.____

A. A system for rapid measurement of lung function in small animals
B. The effect of "warm-up" on exercise-induced asthma
C. Plasma kinetics and urinary excretion of exogenous human and salmon calcitonin in man

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ASSIGNMENT VA. SUBJECT APPROACH - SCIENCE CITATION INDEX

Science Citation Index is available only at SJU Library.

In your research, you have located the following article, which is useful in terms of your subject:

> J. Kastendi, "Predator-prey relationships of 3 subtidal, sand-bottom invertebrates"

You decide to use this article title to do a subject search for additional references using SCI Permuterm Subject Index for 1978.

13. Using SUBTIDAL as a primary term, determine which of the following authors wrote an article that would most likely be useful to your research: 13._____

    A. D. Schwartz
    B. P. J. Leviten
    C. J. O. Griss

14. According to the Source Index, how many bibliographic references are included in the article by the author you chose in question 13? 14._____

    A. 17
    B. 10
    C. 40

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ASSIGNMENT VB. SUBJECT APPROACH - BIOLOGICAL ABSTRACTS LAB INSTRUCTOR

Questions from Biological Abstracts must be done at SJU. For questions 15 to 20 you will use Volume 62, 1976 of Biological Abstracts.

15. Using Bio. Abs. Subject Index, choose which of the following abstract numbers corresponds to an article dealing with the keyword EVAPORATION in connection with SOIL: 15.____

A. 15701
B. 5408
C. 68397

16. Locate the article with the abstract number chosen in question 15. The full title of the journal in which you would find this article is: 16.____

A. Australian Journal of Soil Research
B. Austrian Journal of Soil Residues
C. Austrian Journal of Soil Restitution

17. Assuming the article you found in question 15 above is in the subject area of your research, which of the following pairs of subject categories would you compare in the Concept Index to locate additional articles? 17.____

A. Soil Science - Physics and Chemistry with Biophysics - Biocybernetics
B. Soil Microbiology with Radiation Biology - General
C. Ecology - Biocliamatology, Biometeorology with Temperature - Measurement, Effects, Regulation

18. What is the first abstract number these two subject categories have in common? 18.____

A. 4791
B. 22
C. 1318

19. Using the Generic Index, find out which is the name of the first author of the article corresponding to the abstract number on the topic ANIMAL ECOLOGY for ANOPHELES-GAMBIAE. 19.____

A. Shapour M. Bastan
B. M. T. Gillies
C. Claudio Dotti

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ASSIGNMENT VB. SUBJECT APPROACH - BIOLOGICAL ABSTRACTS LAB INSTRUCTOR

20. You are interested in CHAROPHYTA in the taxonomic category ALGAE. Using the Biosystematic Index, determine which is the correct citation for the article corresponding to the first abstract number under the subject PLANT ECOLOGY. 20._____

A. BER BAYER BOT GES ERFORSCH HEIM FLORA 46: 131-132. 1975
B. J CELL PHYSIOL 87(2): 147-155. 1976
C. J ENDOCRINOL 68(3): 397-400. 1976